ICD08274 FEB. 1983 VOL. 1 NO. 4

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ELECTRONIC FUN with COMPUTERS & GAMES

HOME AND ARCADE SPECTACULAR!

Tomorrow's games today

HOLOGRAPHY
Soon you'll play 3-D laser games!

You can program!
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No one knows better than Atari what arcade players want. And that's just what we've given them: The new Atari 5200 SuperSystem.

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Its controller is the most advanced in the world. With an incredibly precise 360° analog joystick. A

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TRODUCES PERSYSTEM.

12-digit keypad. Plus start, reset, and fire, all in your hand. Even a pause button for stopping the action without ending the game.

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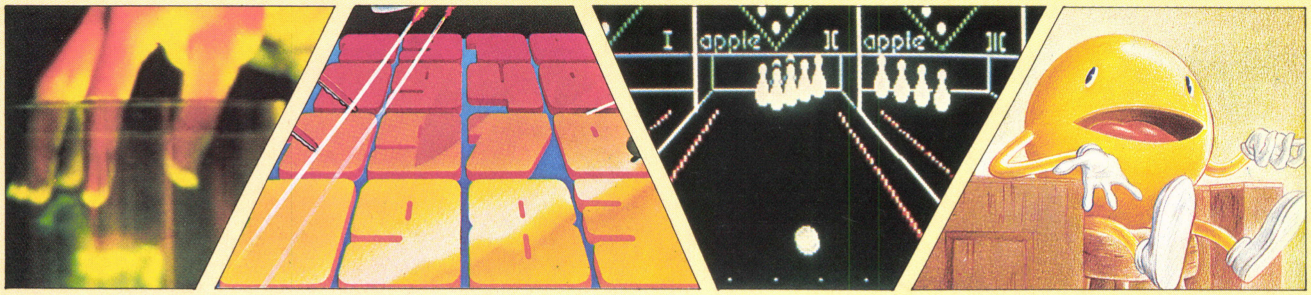

ELECTRONIC FUN with COMPUTERS & GAMES

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COMING ATTRACTIONS *By Randi Hacker, Suzan Prince and Mark Trost* A sneak preview of this year's hottest arcade and home games as seen at two of the industry's biggest shows. Also: *Q-Bert, Time Pilot, Quantum, Pole Position* and *Buck Rogers*: *EF* predicts the arcade winners and losers for the year to come **26**

FUTURE FACT/FUTURE FANTASY: HOLOGRAPHY *By Josh Martin* We've got a hologram for...you! Holograms are 3-D photographs and can be used in games. In fact, *Gunsmoke*, a holographic game, is already available. Are holograms the picture of what's coming in games? The first in a series on the future **68**

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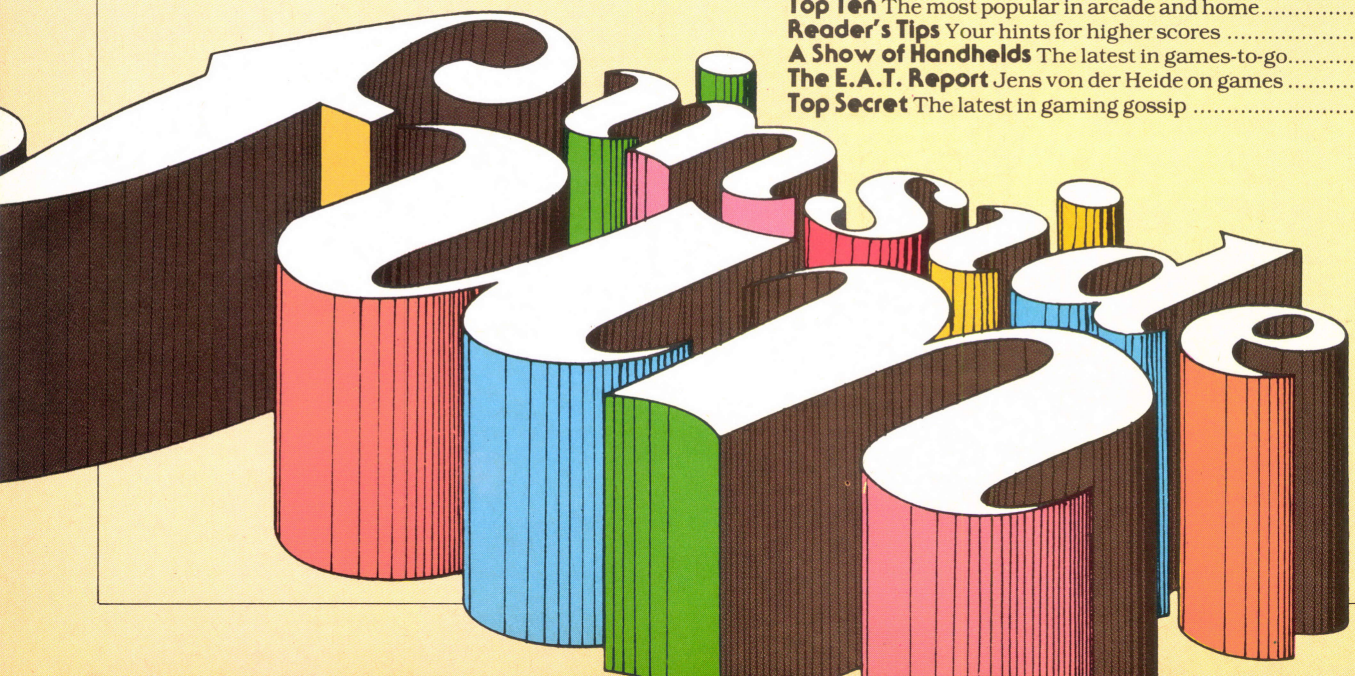
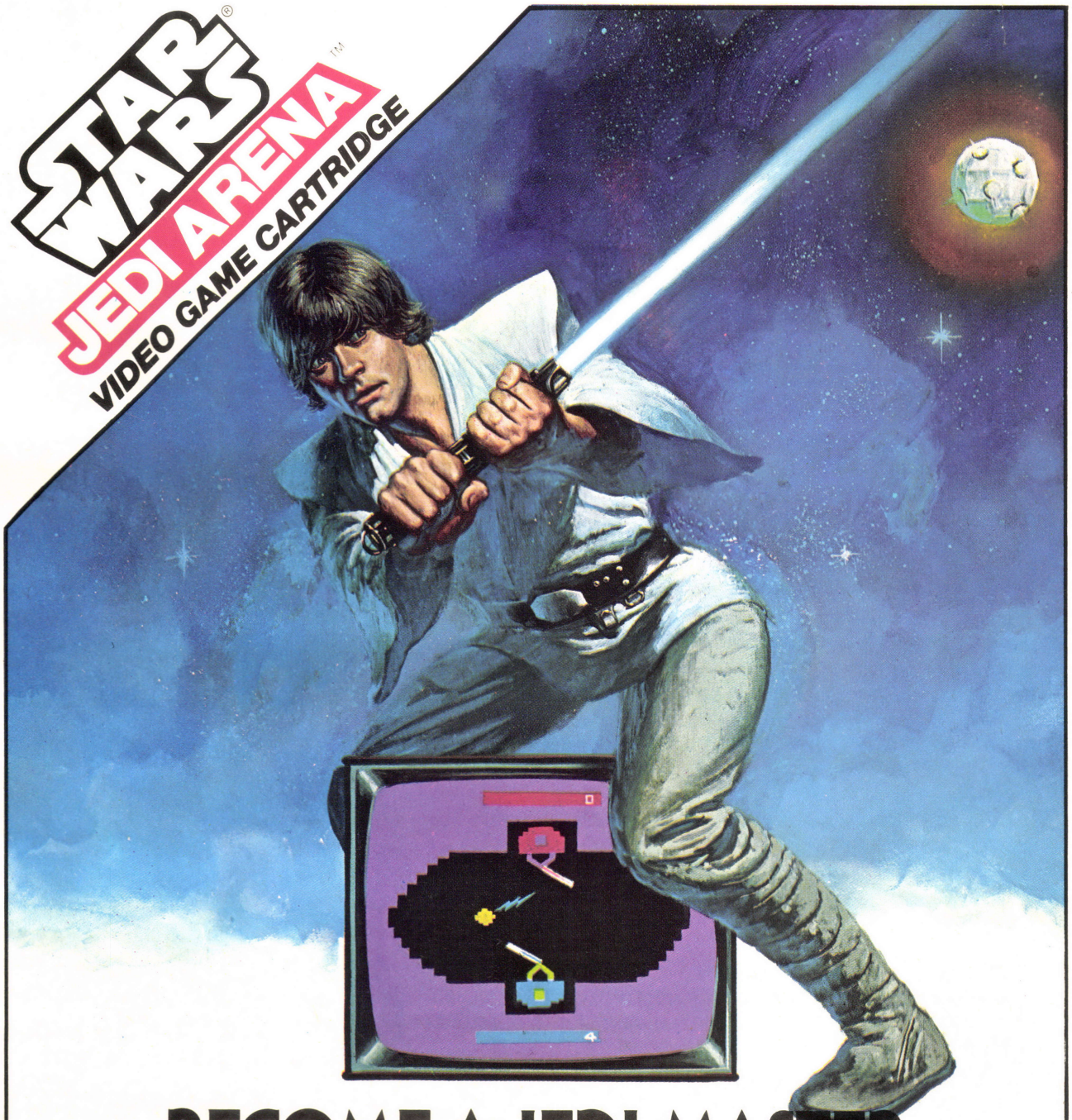


STAR WARS®
JEDI ARENA™
VIDEO GAME CARTRIDGE



BECOME A JEDI MASTER WITHOUT EVER LEAVING HOME.

In the STAR WARS® JEDI ARENA™, perfecting the skills needed to become a JEDI MASTER takes concentration and practice.

Use your LIGHTSABER to direct the attack of the whirling SEEKER. But stay alert, your adversary can attack at any time. So follow your instincts. In no time at all you'll be a JEDI MASTER, ready to go saber to saber against any opponent who dares to do battle with you.

Play the STAR WARS JEDI ARENA home video game. Alone or head-to-head. The challenge awaits you.

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Editorial

Tomorrow... it's only a game away

The first video games were pretty primitive: two paddles and a point of light that acted like a ball. Still, at the time, it was pretty hot stuff. But after a while, the audience demanded more complexity and so technicians went to work developing games that had more than one moving object and several levels of difficulty.

Still, the audience soon got bored with that and the cry came for games that would out-sophisticate even the new generation of sophisticated games. Once this had been accomplished through games like Zaxxon, what did the future hold? Doomsayers ran around yelling that there was no future. Video games, they said, had beed taken to the pinnacle of sophistication and that was all the further they could go. The heights had been reached. There was nowhere to go but down.

But video games people are a stubborn bunch and even as this cry was echoing around the land, they were busy disproving it. Some of the games in store for you next year, for example, will knock your socks off. A wedding of computer technology and laser disc technology promises to open up a whole new era in the area of 3-D and realistic graphics that makes Zaxxon pale by comparison. The spaceship you control will be rendered through computer graphics but the background will consist of actual photographic footage of space, planets, meteors and spacecraft, like something out of Star Wars. *And things can only go up from here. Imagine playing a game of video football in which you control the Rams and Jets and call the plays. It's not too far off.*

There is a future for video games and that future is now.

The Editors

Fun & Games Publishing Inc. President: Richard Ekstract. Vice President, General Manager: Claude P. Sheer. Director of Finance: Neal C. Vitale.

Advertising Offices East Coast. Zoe Aquilla, William O'Brien, 350 East 81st St., New York, NY 10028 (212) 734-4440. West Coast: Shelley Funes, 3757 Wilshire Blvd., Suite 202, Los Angeles, CA 90010.

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ELECTRONIC FUN with COMPUTERS & GAMES

Publisher and Editor-in-Chief
RICHARD EKSTRACT

Associate Publisher
WILLIAM O'BRIEN

Senior Editor
RANDI HACKER

Managing Editor
DAN GUTMAN

Contributing Editors
MICHAEL BLANCHET, SUZAN PRINCE, WALTER SALM, JENS VON DER HEIDE

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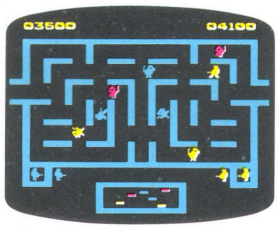
Are you up to the challenge of Wizard of Wor™ and Gorf™?

So you're hot stuff at video games? Joysticks melt in your hand? Don't let it go to your head. Try mastering Wizard of Wor and Gorf, the two Bally/Midway arcade hits you can now play at home. They're new from CBS Video Games.

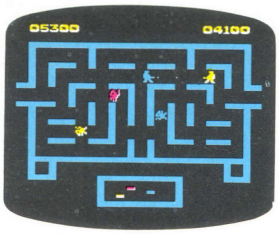
Both are made for the Atari® Video Computer System™ and Sears® Video Arcade.™

WIZARD OF WOR

Dare you enter the Wizard's diabolic dungeon where doom lurks at every turn? Can you keep your composure as the Wizard's henchmen try eating you... ALIVE? Fight back. Use your radar screen.



Vaporize the Burwors. Chase the Worluk.



Until the Ultimate: The sometime-visible/sometime-invisible Wizard. Trust no one.

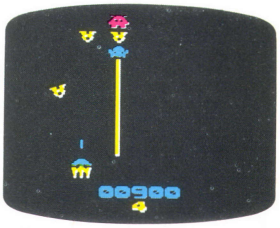
Wizard is designed so two may play at the same time. And since all's fair in Wor, even your best friend can zap you.

Now we don't want you to freak out totally, but if you're still up to the challenge, top the all-time, high score: 99,500 by Frank Merollo (10/82) and Buz Pryzby (8/82).

GORF

Can you hold up under the challenge of four different boards in one game? At nine different levels? Try and beat the high score of 32,700 by Horace Eckerstrom (9/82). No sweat? Well, what if we told you each level was faster than the last? Next time you'll think before you speak. But now you must face:

Gorfian bombs.



Kamikaze crazies & Laser Ships.

Deadly Subquark Torpedoes.

And finally: The dreaded Neutron Flagship.

Gorf's not easy. There's only ONE vulnerable spot on the Flagship. But don't let a little neutronium bomb stop you from hitting it.

Now that you know what to expect, are you still up to the challenge of Wizard and Gorf?

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CBS Video Games

Are you up to the challenge?

letters to the editors

ADDRESS THE ISSUE

Your article on the Timex Sinclair 1000 (November) mentioned a number of suppliers of software as well as publications and a newsletter devoted to the computer. However, the article failed to give complete addresses for the readers to get any of this material.

Roger Kidwell

You are right, and a number of readers requested this information. Anyone who sends us a self-addressed stamped envelope will receive a list of companies selling software and literature for the TS 1000.

EQUAL OPPORTUNITY

In regard to the letter you printed about equal time (November), I would like to state that I agree. It seems like no other magazine has ever heard of Odyssey or Fairchild. I admire your consideration for your readers and I think yours is the best magazine at present.

Chris Ward

WOW! POW!

I like your magazine somewhat better than the others. In the others, many articles talk down to the reader with "wow-pow" and "don't miss this item" hype. Another pet peeve of mine is game reviews. I know advertising dollars are large and a bad review can rock the boat, but the consumer deserves a clean shake. Thanks for giving me both negative and positive opinions, not just gushing praise. Mike Blanchet's review of *Raiders of the Lost Ark* was an excellent example of objective reviewing.

Dale Stewart

ON THE OTHER HAND . . .

You people give four joysticks to just about everything! What is the point of reviewing games if you're just going to say everything is great?

Dick Goggins

Oddly enough, many of our December games got rave reviews while the games we reviewed in the January issue didn't do very well. We pledge to call 'em like we see 'em, as we always have.

MORE CONTESTS

Enclosed is my Name That Game Entry. I like these contests, but it would be more fair if you had a lottery of all winning entries, instead of first come first served.

Evan Grossman

We agree. Due to circumstances beyond our control, EF does not hit the newsstands all over the country on the same day. In the future, we will have a drawing of winning entries, so everyone has an even chance of winning.

STOP TEN

I was very disturbed by the fact that you omitted the *Top Ten* from your second issue. Video game players like to read the charts just like pop music lovers.

Marcia Krell

We agree. From now on, the Top Ten *is here to stay and gets a page to itself.*

MICROWAVE RAVE

I saw a review of *Microwave*, a game you rated excellent, by Cavalier Computer Corporation. Can you give me their address?

Bob Jacobs

Sure. P.O. Box 2032, Del Mar, CA 92014.

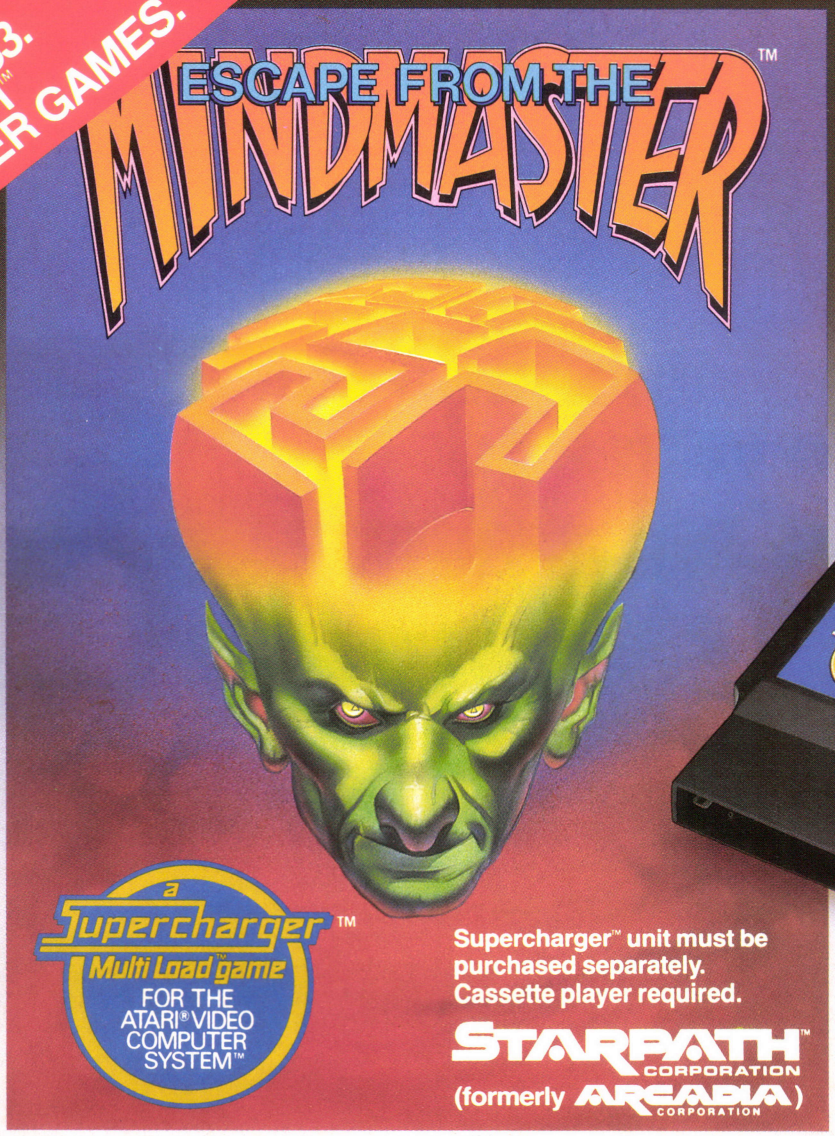
LEAPIN' LIZARDS ANNIE!

My brother and I are both hooked on *Pitfall!* I am also enjoying your magazine very much. Boy! I never knew there were so many different video games.

Aileen Quinn

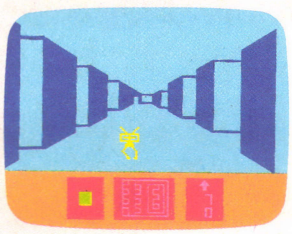
Write to us! We can't promise that we'll answer every letter, but we will read them all. We welcome your comments, advice and questions. Send your letters to: Electronic Fun, *350 E. 81st St., New York, NY 10028*

NEW FOR 1983.
STARPATH™
HOME COMPUTER GAMES.



MATCH WITS WITH THE MINDMASTER.

But Be Warned! The Supercharger™ Gives the MindMaster an Unfair Advantage.



Escape from the Mindmaster™ is the newest Supercharger™ game from Starpath.™ And it uses all the extra game playing power that the Supercharger™ gives your Atari® Video Computer System.™ For the most exciting, most challenging action you've ever encountered.

The exclusive Multi Load™ feature takes you through seven unique gamescapes—each with its own action and graphics—the equivalent of several conventional game cartridges. It's like getting an LP instead of a 45. But since Escape from the MindMaster™ and all Starpath™ Supercharger™ games come on economical cassette tapes, they cost much less than a single conventional game. (Supercharger™ must be purchased separately.)

Take on the MindMaster today. But prepare to be humbled.

For store locations, call:
(800) 227-6703 outside CA
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STARPATH™ CORPORATION

Supercharger™ Powered Games

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Buttons, slides and the shirt on your back

THE ATHLETIC SUPPORTER

T-Shirts, Jerseys

If you see somebody walking down the street with a *Turbo*, *Zaxxon* or *Frogger* T-shirt on, and the T-shirt isn't made by The Athletic Supporter, then somebody's in trouble. The Athletic Supporter owns exclusive rights to the manufacture of those shirts and jerseys in the U.S. and Canada. The shirts are 50% cotton and 50% polyester and are available for adults and children. Shirts—$10.95 for adults, $9.95 for children. Jerseys—$12.95 for adults, $11.95 for children. Specify your size. The Athletic Supporter, 27591 Schoolcraft Rd., Livonia, MI 48150. (313) 261-8798.

LEBO/PEERLESS

Carry Case

Over the river and through the woods to grandmother's house we go . . . but what about our video game system? Can you imagine going away for a week without it?! Now, if you own an Atari VCS anyway, you don't have to. This case holds the console, joysticks, paddles, instruction booklets, wires and eight cartridges. It is made of unbreakable molded plastic. Who knows—grandma might get off on *Yars' Revenge*.

Lebo/Peerless, 60 West St., Bloomfield, NJ 07003.

VISUAL HORIZONS

Computer Slides

Computer photography is here. Owners of Apple computers who design graphics or charts or what-have-you on their computer screens can now capture those images on 35mm color slides. By simply hooking your computer up to a modem (which accesses a computer at Visual Horizons) and then pressing a few buttons, a photo is snapped of the image on the screen and, a few days later, you will receive the pictures in the mail. You have the option of ordering black & white prints as well. The program is also being developed for other computers.

Visual Horizons, 180 Metro Park, Rochester, NY 14623.

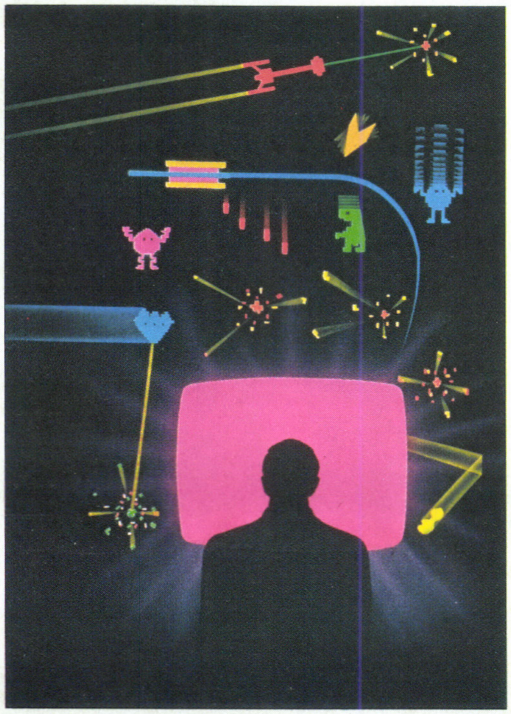
VESTRON VIDEO

How To Beat Home Video Games

$39.95

Player Aids

You've read all the "How To Beat . . ." books. But they're books, and if you *really* want to get good, you have to watch somebody play. This series of videotapes (Beta and VHS) takes a group of popular games and gives you valuable scoring hints on your own TV screen. Twenty games are discussed on each tape, among them—*Space Invaders, Chopper Command, Frogger, Demon Attack, The*



Empire Strikes Back, Lost Luggage, Donkey Kong, Asteroids and many more.
Vestron Video, 911 Hope St., P.O. Box 4000, Stamford, CT 06907.

COLECO

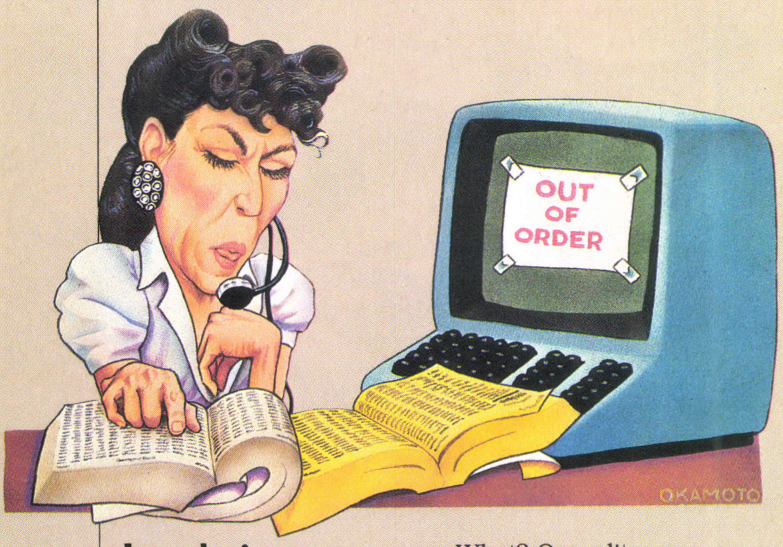
Driving Module $60

Driving games were some of the first really popular arcade games. Up until now, if you had the urge to drive, you had to drive out to the arcade to do it. Fortunately, Coleco licensed the rights to *Turbo* and developed this expansion module so now you can do all the driving you want without leaving your living room. The expansion module plugs into the ColecoVision, has a foot pedal for acceleration, a steering wheel and a gearshift which is operated through the roller controller. Other driving games from Coleco will follow.
Coleco, 945 Asylum Ave., Hartford, CT 06105.

KY ENTERPRISES

Fingertip Controller $19.95

Man does not live by joystick alone. Some arcade games, *Asteroids* for instance, use buttons. Some people like them, others don't. If you prefer buttons, now you can use them for your home video games. This new Fingertip Controller gives you rapid fire action and quick directional changes. The versatile directional style button configuration is easy to master due to its logical layout. It has a 6-foot cable and can be either hand-held or placed on a table. Left handed models are also available. The Fingertip Controller plugs into your Atari VCS, Sears Tele-game, Atari 400/800 or Commodore VIC-20 computer.
KY Enterprises, 3039 E. 2nd St., Long Beach, CA 90803.



A comical catch-all of odds and ends

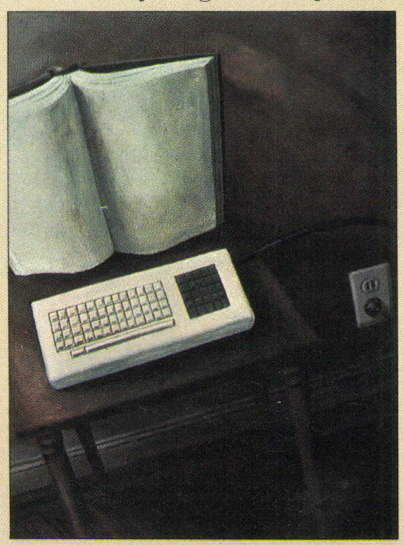
Look in the Book

You never realize how much you rely on computers until one of them goes down. Recently, one of our editors needed to find a telephone number. As the Yellow Pages were not handy (and, even if they had been, chances are she wouldn't have used them), she called information for the, well, information. "I'd like the number, please, of . . . " "I'm sorry," came the nasal reply, "our computers are down and we can give out no telephone numbers at this time."

What? Our editor was, naturally, nonplussed. How could this be? It was tempting, after all those times that operators have admonished us to "Please use the book first," to tell the operator herself to use the book!

Twenty Grade A Cartridges

No sooner do you start having fun with something than someone comes out with the news that it's bad for you. So it came as no surprise that C. Everett Koop, the surgeon general of the United States would declare video games hazardous to the health. According to Koop, psychiatrists are already seeing "aberrations of childhood behavior" resulting from the games. Symptoms brought on by the games, he says, include "tension, sleeplessness . . . and dreams that have something to do with the things they have been doing all day." If that's the case, then work should be declared hazardous to your health, too, because we know we've suffered from one (or all) of those symptoms after a hard day at the office. Never mind. Will this be the start of a campaign like the non-smoking campaign? Will we soon see playing and non-playing sections in restaurants and airplanes? Maybe. Anyway it all seems moot. Based on our own private research, we've found that games aren't hazardous at all . . . provided you don't smoke them.



The World Disk Encyclopedia

Two American institutions are being threatened with extinction and they both have to do with the encyclopedia. The first has to do with the volumes themselves. The World Book is now available for consumer use through CompuServe, the data base. The on-line World Book will enable computer users to refer to any part of the 10 million word text by simply searching through a comprehensive listing of more than 31,000 subject entries. Now, while this takes up scads less storage space, it does rob the house of that certain learned look that comes with dusty and aging tomes stored behind glass on dignified ceiling-to-floor bookcases. The second institution that is on its way out because of this rush to computerization is the traveling salesman. Will this move to put everything on-line spawn a whole new genre of jokes? For example: Did you hear the one about the traveling computer and the farmer's daughter?

B-52 Bummer

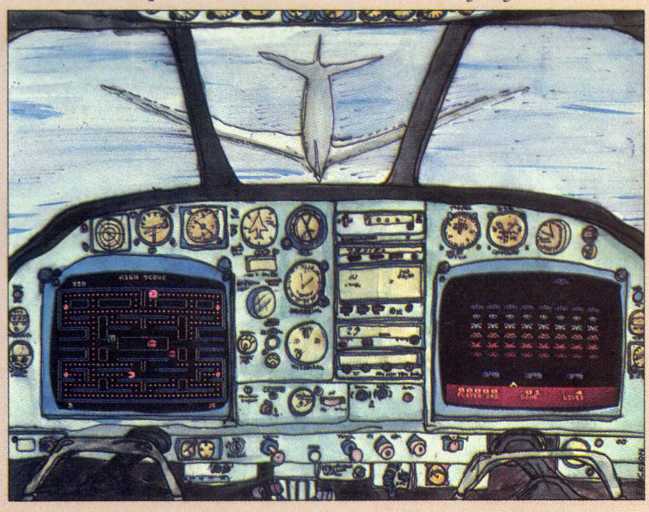
If you think war is fun, wait until you try the latest state-of-the-art war simulation games currently available in military base arcades across the country. This new generation of flight simulators uses CGI

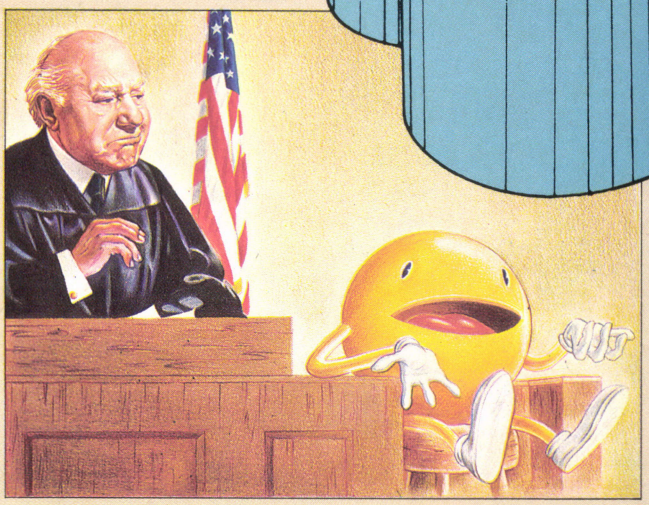
Glitches

(Computer Graphics Imagery). The pictures generated are so realistic that dogfights can even be staged. The pilots wear "G-suits" that fake the tug of gravity and they emerge from the simulated cockpit after one of these exercises wringing with un-simulated sweat. Right now these simulators are just a little beyond the financial reach of most consumers (running about $29 million apiece as they do) but don't worry. In a few years you'll probably be able to get them used for only about $10 million.

Future Shlock

Chips are coming to TV and we don't mean Erik Estrada. According to the *National Enquirer*, the new generation of TV sets will, through the use of those omnipresent computer chips we've all grown so fond of, be able to automatically fine-tune the picture, correct the color and even provide instant replay without a video tape recorder. Apparently this will all be accomplished with eight chips which will replace parts found in today's TV sets. What they'll do is take the TV signal apart electronically and then reassemble it. Computer chips will also be able to store whatever images have been on the screen for the last 10 seconds and then replay those 10 seconds on the top of the screen while the action continues below. Unfortunately, while the new TV sets will change the *way* you watch TV, they won't change *what* you watch—the same old stuff—*Laverne & Shirley*, *The Facts of Life*, etc.





What we need are computer chips that give us the option of taking apart a TV show electronically . . . and not putting it back together at all.

Where Were You on the Night of...

Every once in a while, the law requires new interpretation. Things come up in trials that are, for all intents and purposes, without precedent. The video game craze has posed several new legal questions, namely: Is every Pac-man innocent until proven guilty? How do you arrest a dot with no arms on which to place handcuffs? Can a dot be hanged twice for the same crime and how? And how would you go about organizing a jury of his hires peers? These were some of the questions raised at a recent trial in Tennessee. It seems that Robert Moore, who was accused of assaulting a young woman, testified that, despite his victim's eyewitness identification of him as her attacker, it couldn't have been him. Why? Because, according to Moore, he was playing *Pac-Man* at a convenience store when the crime occurred. Does this implicate Pac-Man as an accomplice? Can our loveable dot be entering into the sordid world of (gasp!) *Gangster Alley*? One more legal question for all you attorneys out there: If the defendant had been playing a handheld version of the game, could he be convicted of assault and battery pack?□

Michael Okamoto, Pat Kinsley, Bob Winterson, Gayle Erikson, Andrew McGhie

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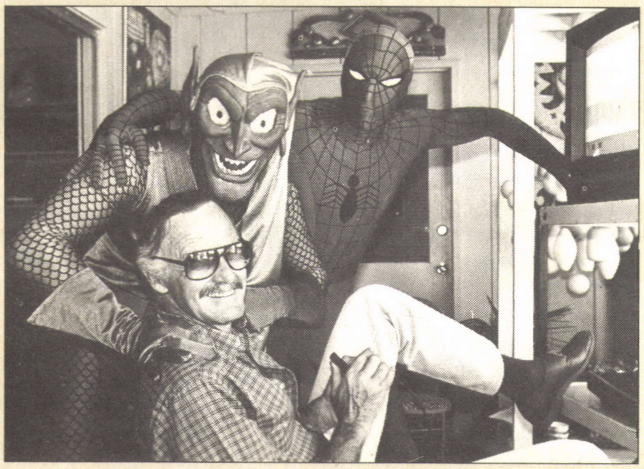
E.F.C. Times

VOLUME ONE, NUMBER FOUR FEBRUARY 1983

SPIDERMAN Arrives From Parker

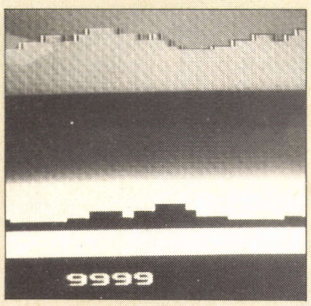


Stan Lee with Spiderman and Green Goblin.

How many times has this happened to you? You sit down at home for a relaxing round of video games, when suddenly two guys burst into your living room dressed as Spiderman and Green Goblin? That's what happened to Stan Lee, who created those characters and countless others in the pages of Marvel Comics. It's all a stunt to promote the new Marvel/Parker Brothers collaboration, *Spiderman*. The new game is compatible with the Atari VCS and sells for $27.50. For a review, see this issue's *Hits & Missiles*.

Monthly Contest

The winner of our November contest was Robbie Hatch of Minneapolis, Minnesota. As you can see from his photo, Robbie scored 9,999 (or more) in *The Empire Strikes Back*. He wins the cartridge of his choice. This month . . . *Zaxxon*, for ColecoVision. The person who sends us a clear photo of his or her TV screen with the highest *Zaxxon* score by February 10, 1983, is the winner. Send entries to: February Contest, *Electronic Fun*, 350 E. 81st St., New York, NY 10028.



The top Empire *score.*

Q-BERT Too!

In a late-breaking news item, we have just received word that *Q-Bert*, the arcade game that America is falling in love with, has been licensed by Parker Brothers. The cartridge will be available by the end of the year in the Atari format. In *Q-Bert*, you are a mangy-looking character who hops from cube to cube on a geometric pyramid, trying to change the color of all the cubes while avoiding contact with balls, coiled snakes and other weird creatures. For further information, see our article on the AMOA show in Chicago.

10-year old Wins PICK AXE PETE Championship

Tony Scardigno of Weehawken, New Jersey, was awarded one pound of gold (about $6,000) for winning Odyssey's *Pick Axe Pete* Pick-Off contest held at the World's Fair in Tennessee. Tony beat out four other finalists, all older than himself, scoring 938 points in the competition. Not only had the young man never won any gold before, but prior to this contest he had never ventured out of New Jersey, flown on an airplane or visited a World's Fair. When asked what he would do with the gold, Tony replied, "I won't tell my friends, because they would just bug me about it."

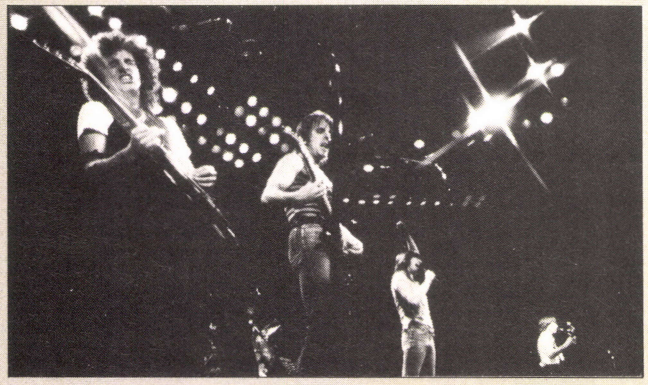
Tony Scardigno after the big Pick-Off.

E.F.G. Times

ROCK VIDEO GAMES– THE NEXT TREND?

First, it was arcade games that were turned into home games. Then it was popular movies. The next wave may very well be licensing hit rock and roll songs and translating them into home video games. The first game of this type, *Journey Escape* from Data Age, is in the stores this week, for $34.95.

Journey, the 10-year-old San Francisco band, is a phenomenal success.



Journey, one the top rock and roll bands in the country, is the first one to go video game.

Their last six albums have sold a million copies. They have sold 15 million albums all together and *Escape*, their latest, sold five and a half million alone. Band members Steve Perry, Neal Schon, Ross Valory, Steve Smith and Jon Cain are big video game fans themselves, making them a natural for such a project. The group contributed a song to the soundtrack of *TRON* and drummer Steve Smith is a *Defender* champ—he regularly scores over a million points in an hour.

Journey Escape, in which you are a band member trying to run past frenzied groupies, managers and photographers, is reviewed in depth in this issue's *Hits & Missiles* section. It is currently available in the Atari VCS format only, but Data Age is considering making the game for Intellivision owners, too. There are also plans to turn it into an arcade game.

Journey Escape is the first in a series of rock and roll releases from Data Age. The music industry has been hurting recently, some say because of the rise of video games. It will be interesting to see if the other video game manufacturers follow suit with rock and roll games of their own, and if so, can the mixed marriage of rock and roll and video games be a happy one?

Imagic finds ATLANTIS in Bermuda

Andy Levine, 15, from Needham, Massachusetts, has owned the *Atlantis* cartridge by Imagic, for just four weeks but already he is the best *Atlantis* player in the nation. Andy proved that recently in Bermuda, when he scored a whopping 1,968,800 points in an hour. By defeating four other finalists, Andy was able to walk away with a nice little prize—$10,000 in gold.

Andy Levine

According to the designer of the game, Dennis Koble, it is not simple eye-hand coordination that makes Andy the champ. "He's an exceptionally quick analyst of the game program and devised a strategy to achieve the maximum points per minute that the game program would allow," Koble says. Part of Andy's technique is to always use the side cannons, as points are doubled that way.

Imagic Holds $1,000 Contest

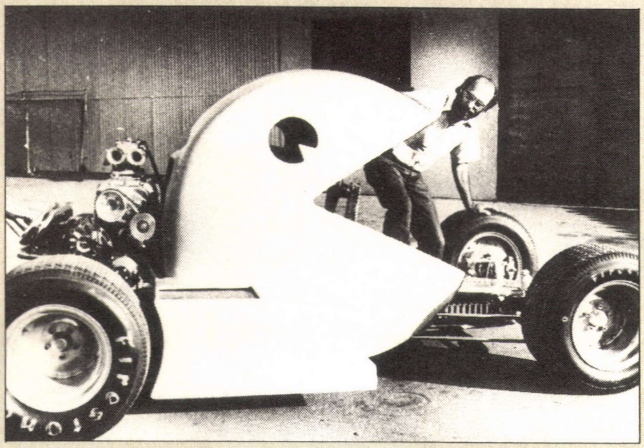
Can you solve the *Riddle of the Sphinx*? If you can, big bucks may be coming your way from Imagic. To win, you just play game three on that cartridge and describe your journey through the desert and the two correct offerings you made at the Phoenix, the Temple of Isis and the Temple of Anubis. Then give the offering you made to the Sphinx and the one at the Temple of Ra. Creativity, as well as the correct answer, is important.

Send entries to: *Riddle Contest, c/o Imagic, 981 University Ave., Los Gatos, CA 95030*. Entries must be received by January 31, 1983.

Can You Spare $1.35?

According to the Rand Youth Poll, in 1981 the average teenager spent $5.36 a week on entertainment, of which $1.35 was for coin-op video games. Boys from 16 to 19 spent the most on video games—$2.30 a week.

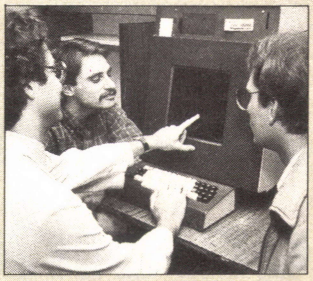
E. F. G. Times



Rod Powell and his Pac-Car.

THE NEW PAC-KARD?

Will Detroit jump on the video game bandwagon and start making cars based on coin-op characters? Unfortunately not. Rod Powell of Salinas, California made this Pac-Car himself out of truck fenders and Volkswagen tops. He values the car at $75,000 and says it's "too valuable for transportation."



Bugs and Drugs?

Young Doctors in Love With Computer Games

At the Illinois Medical Center, the interns are hot for a new game they play on the hospital's computer terminal—*Bugs and Drugs*. In the game, you have to dodge antibiotics and hallway muggers to reach the hospital's top floor. Pictured here are Dr. Fred Zar and his students. According to UPI, Dr. Zar is an "infectious disease fellow." We assume that means Zar has an advanced degree in infectious diseases and *not* that he is contagious.

Name That Game Contest

The response was overwhelming. In our first issue we asked you to name nine unmarked games. We have received 3,000 entries and they're still pouring in! Here are the correct answers . . .

1. *Space Spartans* (Mattel)
2. *Lady Bug* (Coleco)
3. *Alien Invasion* (Zircon)
4. *Space Cavern* (Apollo)
5. *Pac-Man* (Atari)
6. *Laser Blast* (Activision)
7. *Lost Luggage* (Apollo)
8. *B-17 Bomber* (Mattel)
9. *Super Breakout* (Atari)

Many of you got them all right. Common errors—missing *Alien Invasion* entirely, saying the manufacturer of the Mattel games was Intellivision, spelling *Space Cavern, Space Caverns* and calling *Super Breakout* just *Breakout*. The first 110 correct entries are the winners, and they will be notified shortly. Their names will be published next month.

Thanks to everyone who entered the contest.

JETS AND GIANTS PLAY FROGGER

What do professional football players do during extended player strikes? They play *The Empire Strikes Back* and *Frogger*. Quarterbacks Phil Simms of the Giants and Richard Todd of the Jets squared off over at Lenox Hill Hospital in New York recently to have some fun with the children in the pediatrics ward. Simms, a member of the 1979 NFL All-Rookie team raced frogs with Todd, who set the Jets' single-season record for pass attempts (497) and completions (279) in 1981. In another friendly match, Jets defensive tackle Marty Lyons took on defensive end Gary Jeter of the Giants at *The Empire Strikes Back*. Lyons, in addition to his 53 solo tackles last year, won the Jets team rib-eating contest, consuming 34 in just three minutes.

A good time was had by all at Lenox Hill.

Better than Monday Night Football?

Quote of the Month

"Someone told me it [Pac-Man] was a round thing that gobbles up money. I though that was Tip O'Neill."

President Reagan

Have you got an item for the EFG Times? News events, game tips, photos and other information are gladly accepted. Send material to: EF, *350 E. 81st St., New York, New York 10028.*

Screen plays

Jousting with galactic ostriches

By Michael Blanchet

If you've tried your hand at *Joust*, the latest from Williams, you've undoubtedly been knocked off your ostrich a few times. If you spent countless hours observing seasoned Jousters in hope of discovering the secret method of success, I'm willing to bet you found none.

For those who are still scratching their heads, take a few steps back. In *Joust*, video returns to the days of swords and sorcery. The player, as a gladiator, mounts not an Arabian steed, but an ostrich. Using a joystick and "Flap" button, the object is to protect your neck and dismount as many riders as possible. Unseating a rider is accomplished by crashing into him.

Before discussing strategy, a word about technique is in order. The action of the Flap button bears little similarity to the "Thrust" control used on most games. A tap or two will get the bird airborn. If you stop flapping you start falling. But not right away. Your ostrich will continue to ascend and then hang motionless just before falling. Remember this!

Hovering

Controlled flight is the key to *Joust*. Continual slapping of the Flap button will result in an undesirable buildup of power. The idea is not to fly east to west, but north to south, dropping down on enemy riders as they pass. To do this, position yourself on high ground or in the air.

Hovering in one general area is easier and safer than cruising across the screen to meet the enemy head on. I found that floating alongside the upper ledge on the right side is an ideal spot, both offensively and defensively. Observe the riders as they exit the left side. After a few crossings you will be able to time their appearance on the right. When they enter below you, stop flapping and drop on top of them. Repeat the north/south flight until mounts move above you. At this point, either work the top section of the screen by floating and dropping as the riders pass, or move to the bottom and implement the same strategy. You may find the bottom easier, particularly if only a few enemy ostriches remain. At the top, birds have a tendency to fly with their helmets scraping the top of the screen. Unless you are able to hold as steady a course as they, you are better off at the bottom. Don't worry about confronting enemy riders. Gain strategic positioning and wait.

Once an opposing rider is dismounted, his body becomes an egg. Eggs will fall until they come to a nest on one of the ledges. If left unattended, an egg will hatch a new rider. Eventually a bird will fly to the rider and the two will take off.

For maximum points, catch the egg while it is airborn. If you can't, add points to your score by simply running over it. If you are unable to reach the egg immediately, don't worry too much. Once a new rider hatches though, make running over him a priority target. Your greatest enemy during the egg wave is your own anxiety. □

Michael Blanchet meets the birds: Joust one of those things.

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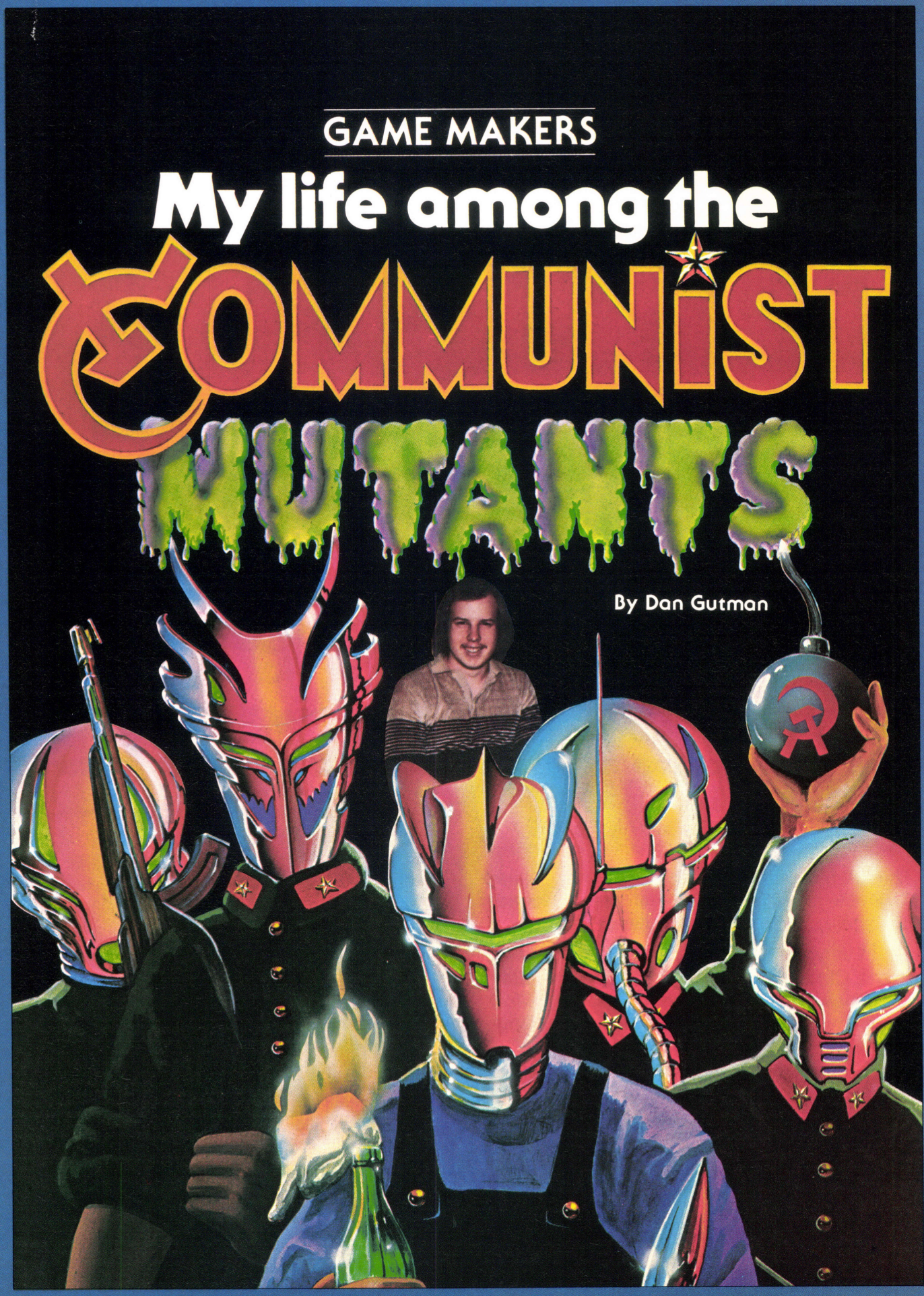
GAME MAKERS

My life among the COMMUNIST MUTANTS

By Dan Gutman



Starpath's Steve Landrum talks about his red hot-new game

Communist Mutants From Space. *Even if the game was a total loser, it would earn its place in video game history. Fortunately, it's not a loser. Bright colors and* Galazian*-like action make* Commie Mutants *into a white-knuckled grabber. The designer, twenty-year-old Steve Landrum programmed the game for the Atari VCS with the Starpath Supercharger. We talked with Steve about* Commie Mutants *and his next game,* Dragon Stomper.

EF: I'll bet COMMIE MUTANTS wasn't your original title.

SL: Right. My working title was *Galactic Egg.* But that was just temporary. I knew it wouldn't be the final title.

EF: So where did COMMIE MUTANTS come from?

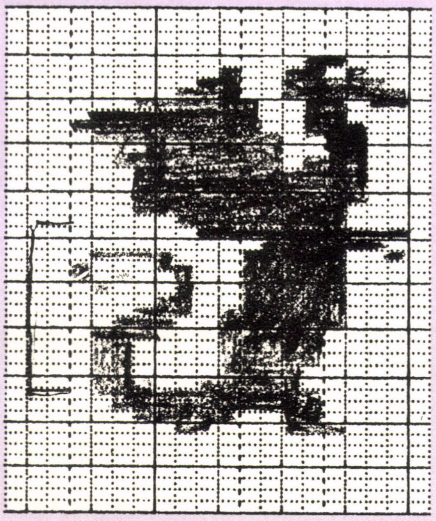
SL: I can't take the credit. There was a discussion with the executives at Starpath and the advertising agency about names for a few of the games. Some of the suggestions were getting pretty way out and silly. At one point somebody said, "Hey, why don't we just call it *Communist Mutants From Space*?" That got a big round of laughs and nobody took it seriously. After the meeting, somebody came up to me and asked me how *I* would feel about *Commie Mutants.* I didn't know what to say—I didn't think he was serious. But over the next few weeks, we did some surveys with kids. We gave them a list of names and asked them which ones they liked best. Everybody said they liked *Communist Mutants From Space* and so that had to be the name.

EF: How did you feel about that?

SL: I was somewhat concerned. I thought we might get into legal problems. I wasn't sure how the public would react and my parents were really upset. They didn't think it was appropriate. They thought I should protest. But the name was an attention-getter and it had a nice ring to it. It's one that you just can't pass up, so I decided that I liked it.

EF: What is COMMIE MUTANTS about?

SL: It's a space shoot-out game. There's a mother creature who, according to our game catalog, is filled with irradiated vodka. She's laying eggs and creating an army of Communist mutants. They are going to try to take over the universe and subject everybody to Communist rule.



Dragon Stomper's main character.

EF: How did you come up with the characters?

SL: They evolved slowly. The initial idea for the game—the egg field at the top and the creature laying eggs—was there from the beginning. But the shapes went through quite a few changes. At first the creatures were a single graphic with essentially no animation. The first characters I drew looked a lot like *Space Invaders.* But I made changes here and there. I started animating them. I made one look like a bird—flapping its wings and flying around.

EF: Why did you make the eggs block-shaped?

SL: The system I was programming for, the Atari VCS, is a fairly limited system in what it will do for you. With the knowledge that I have now, I would have spent the time and effort to make round eggs. But that was the first game I had written for the system and while I was writing the game, I was still reverse engineering the system.

EF: What is reverse engineering?

SL: We took a VCS, and we didn't know anything about it except for the games other people had produced. We essentially took it apart and found out what made it tick, how to get things to come up on the screen, how to make sounds come out of it. We started from the bottom up.

EF: The Starpath Supercharger plugs into the Atari VCS. What does it do?

SL: Two things. One, it allows you to load games on cassette tape. Two, it expands the system's capabilities because it's got 6K of RAM and 4K of ROM.

EF: How does the Supercharger work?

SL: You plug the Supercharger into the VCS and a cable comes out the back. You plug the cable into the earphone jack of any cassette player and you're ready to go. Your TV screen will give you instructions like REWIND TAPE, PRESS PLAY and STOP.

EF: When I played the game, I expected the tape to be spinning, but it was still. Does this mean the entire game is contained on the inch of tape that is against the tape heads?

SL: No. The program gets loaded from the tape into the Supercharger. There are blue panels that

At left, Steve Landrum and friends.

appear on your screen, and as they appear, the information is going from the tape across the cable and into the Supercharger. When you stop the tape, the whole program is in the Supercharger and you can play the game like any other VCS game.

EF: Do you program differently for the Supercharger?

SL: Yes, it gives me several advantages. To start with, all the memory you're working with is RAM. That way the program can have a large amount of data at once.

EF: What did you do in COMMIE MUTANTS that you couldn't have done without the Supercharger?

SL: It's hard to identify one specific thing. It's more of an overall effect. But, for instance, the Supercharger allows me to keep the scores of four players in memory at once. In the VCS, when something is happening on the screen, that's because right then, the program is telling it that information. The program isn't doing anything else but saying put this shape here, put that color over there and fill in this region this way. One thing the Supercharger does is allow us to rearrange how the time is allocated. In the time that is normally used for computing, we can decide what the screen is going to look like and store an image of the screen in memory. And then when it comes time to actually display the screen, we just read it out of memory instead of having to calculate what each line of the screen looks like.

EF: COMMIE MUTANTS is the first game I've seen that has slow motion. Why did you put that in?

SL: The first time I put slow motion, or Time Warp, in, was when the program wasn't behaving the way I wanted it to. One of the ways to figure out just what was going wrong was to slow things down. When I first started working on the game, I was afraid it wasn't hard enough. But when I actually got the aliens moving around shooting, I found it was much *too* hard. So slow motion and the other options make the game easier to handle.

EF: All those options on the menu almost gives the player the idea he is programming the game himself.

SL: Yes. I was irritated with some other games that have hundreds of variations and just one switch to call them all up.

EF: Can you give me a hint to beat COMMIE MUTANTS?

SL: There is a technique one of the other programmers discovered. If you put on Time Warp, Penetrating Fire and Guided Missiles and have the switch set for fast ships, you can take out a whole row of eggs with one shot. When your shot hits the first egg, you move the joystick all the way to the left or right at the exact impact time. It takes a lot of practice.

EF: What about some of the other options in COMMIE MUTANTS?

SL: There's also the shields option. You can pull back on the joystick and your ship starts glowing. While it is glowing, you can't be hit by enemy fire.

EF: What is "penetrating fire"?

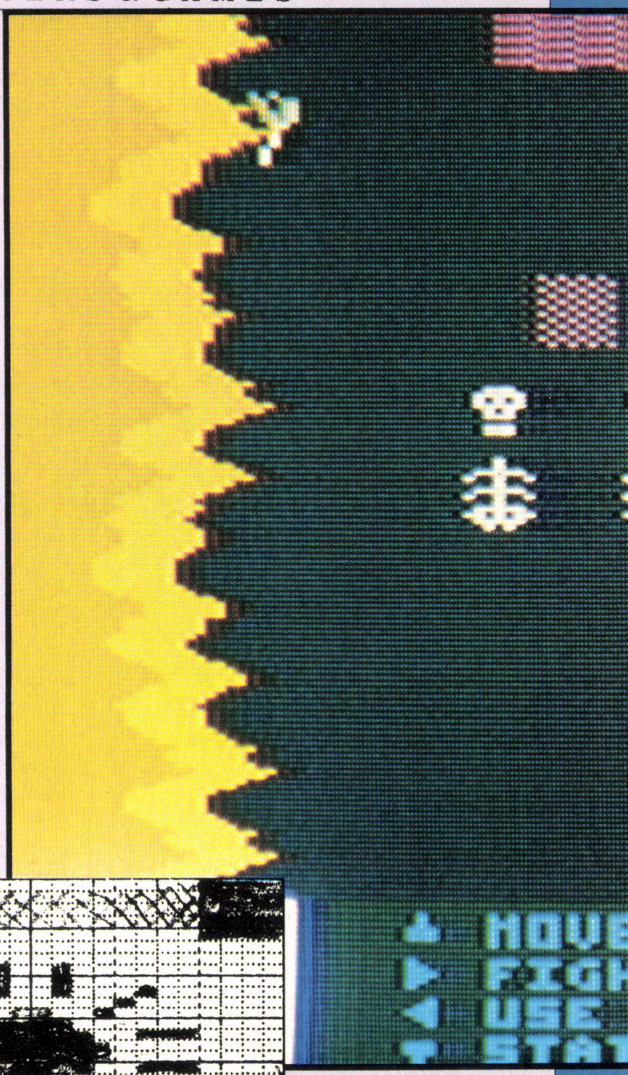
SL: A couple of people who were testing the game said it was too hard to hit the mutant at the top of the screen. So I programmed in penetrating fire, which lets you hit an egg in the bottom row and have the momentum of the shot carry it through to hit whatever is above it. Actually, I originally had *two* mutants at the top of the screen. Then it was *really* hard.

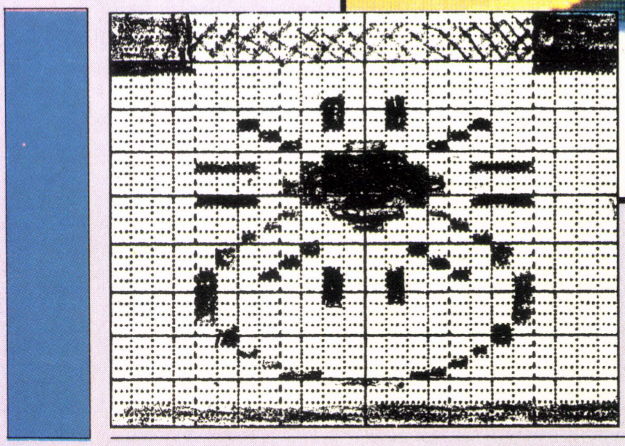
EF: Why did you get rid of the second mutant?

SL: When I had two mutants, I was unable to put much animation into either of them. But by getting rid of one, it allowed me to give the remaining one more color and animation.

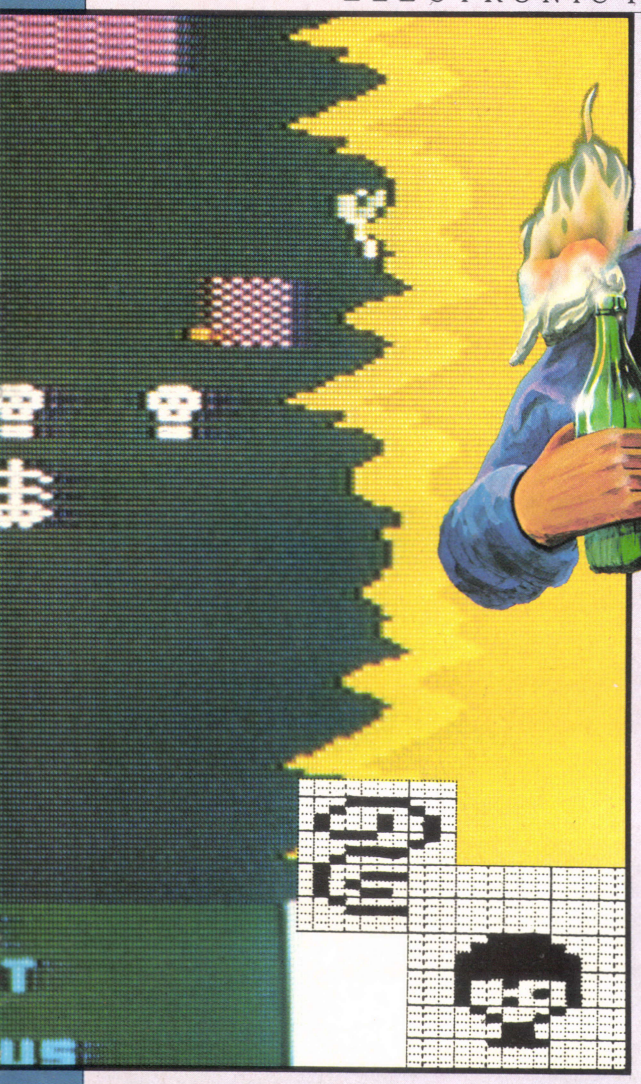
EF: I hear you're working on a new game.

SL: I just finished it Tuesday. It's called *Dragon Stomper* and it's a role playing adventure game like *Dungeons and Dragons*. You're a warrior roaming the land and there is a dragon deep in a cavern that has stumbled upon an amulet. You have to pick up various items to increase your power. Then you enter the dragon's cavern and avoid the traps he has laid for you. Finally you have a battle with the dragon





Above, DRAGON STOMPER, surrounded by rough sketches that Steve drew before he finished the multiload Atari VCS/Supercharger game.



Below, Steve's big hit, COMMUNIST MUTANTS FROM SPACE.

and get the amulet.

EF: How is an adventure game different than a game like COMMIE MUTANTS to design?

SL: A lot more thought has to go into a game like *Dragon Stomper*. You are leading the player through a kind of storybook and the story is unfolding as the game is played. No two games are the same. Adventure games are more difficult to design.

EF: I understand it's a multiload game. What does that mean?

SL: A multiload game is a game that is too big to fit into the system all at once. So what you do is load the first part of the game into the Supercharger and accomplish whatever goal has been set. Then you move the tape in the cassette to the next part of the game.

EF: Do you prefer designing adventure games?

SL: I'm not sure. It takes more creativity and it's a lot more work. It took about seven months to design both *Commie Mutants* and *Dragon Stomper*, but I put in very long days on *Dragon Stomper*.

EF: Game designing isn't a 9 to 5 job?

SL: It can be, but rarely is over here. You put in as many hours as you need to complete the game. I've never worked all night on a game, but I *have* had 16 hour work days.

EF: How did you get into designing?

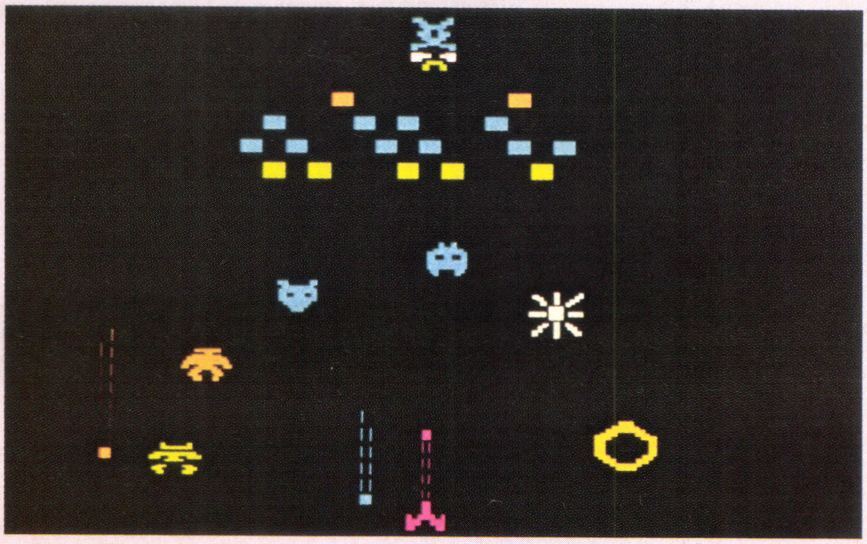
SL: It started in high school. One of my freshman courses was in computer programming. The first computer I worked on was a Data General Nova. In my sophomore year I started designing my own games and the next year I got my own computer, an Apple. I'm 20 years old now and I've spent most of my life in Livermore, California. I was born in Mexico.

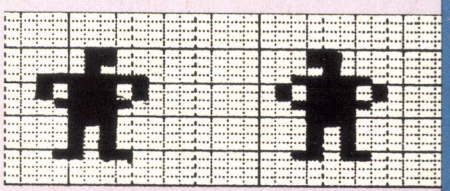
EF: How many games did you design before COMMIE MUTANTS?

SL: That's a hard one. I wrote a lot of parts of games, but I'd usually get tired of them and never finish. The only game I had sold was called *Viper*, for the Apple. About 20 or 30 copies were actually on the market before the rights were purchased by Sirius Software. They were coming out with a very similar game called *SnakeByte* and they wanted to avoid competition with themselves. The very first game I wrote was a number guessing game in which the computer came up with a number and you'd have to figure it out in 10 or 20 guesses.

EF: What did you play before video games came along?

SL: I used to play a lot of chess, but I had to give it up. I had learned a few tricks that would checkmate a real novice in two or three moves. They made you seem like you were a lot better than you really were. I got a reputation as a hustler, and people didn't want to play me anymore.□





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TO PLAY WITH JOURNEY?

UP TO NOW, YOU'VE HAD IT EASY.

COMING ATTRACTIONS

What's NEW in the arcades

A sneak peek at the year's top games

How would you like to take a peek behind the scenes at one of the arcade industry's biggest trade shows? Well, you can because we did. We went to the AMOA (Amusement and Music Operator Association) show and we saw some fantastic games—games that will knock your socks off. And they're all due in arcades near you very soon . . .

All the major manufacturers were represented and brought with them not only games we've already seen in the arcades (*Donkey Kong Jr.* and *Swimmer*, to name two), but also games that would be gracing your neighborhood arcades in the near future. And boy, are you in for a great year! Needless to say, many of the games themes seemed vaguely familiar if not exactly the same as so many of the blockbuster games of the past year but amid the many shameless *Donkey Kong*, *Dig Dug* and *Pac-Man* rip-offs, a number of new, original and graphically spectacular games turned up.

Astron Belt from Sega was the hottest new game technology exhibited. Part laserdisc and part computer graphics, *Astron Belt* puts your spaceship in the foreground while actual photographic footage of space and spaceships, planets and meteors fly by in the background. The dimension of realism added through this technique is not to be believed. And, according to Sega, you can expect to see a game of this type sometime this year.

Also new from Sega is *Buck Rogers Planet of Zoom*, an incredibly complex game which improves vastly on the 3-D effects first brought to you in *Zaxxon*. You control a space ship which flies at astounding speed and must dodge enemy spacecraft, fly

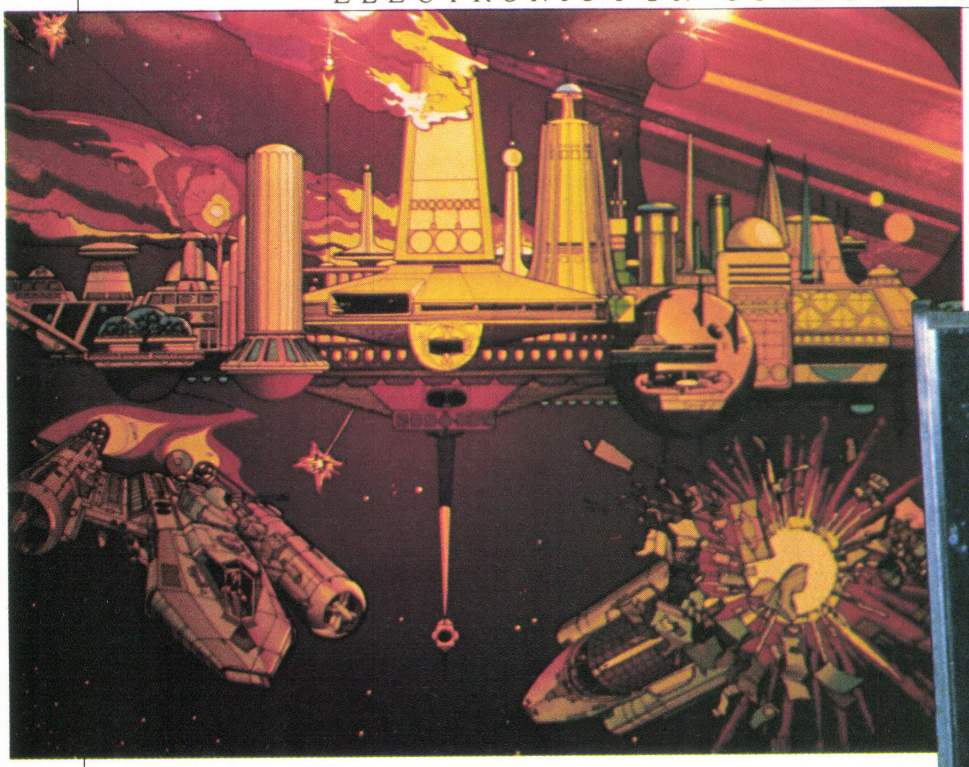
through narrow corridors and destroy all manner of space debris. The graphics are phenomenal and the sense of speed and excitement utterly unparallelled.

Another new game from Sega was *Monster Bash*, a sort of macabre *Donkey Kong* featuring a gothic mansion, bats, Dracula and other creatures of the night. *Super Zaxxon* was also on display, a sequel to last year's smash hit. *SZ* is very similar to *Zaxxon*. Too similar, actually. We think a sequel should go beyond the original, not duplicate it.

Sega also presented *Tac/Scan*, a game featuring brilliant vector graphics and spectacular 3-D effects. In it, you are the commander of a squadron who must destroy

ASTRON BELT, the first laserdisc arcade game. Your spaceship flies past actual photographic footage of rockets, planets and streaking meteors.

Paul Elledge



Stunning graphics and spectacular special effects characterized many of the new games exhibited at the AMOA show. Below, SUPER ZAXXON and BUCK ROGERS, both of which represent a new dimension in three-dimensional arcade games.

an evil alien empire and escape the galaxy alive. Special effects include constantly changing perspectives and a dramatic Space Wrap Tunnel which places you elsewhere in the galaxy.

From the people that brought you *Pac-Man* comes . . . *Pac-Man*. Or rather, *Super Pac-Man* which in our opinion, was a big disappointment. Other than eating apples and becoming gigantic as the result of ingesting power pills, the *Pac-Man* game remains essentially the same oral fixation it always was.

Midway's *Domino Man*, *Blueprint* and *BurgerTime* were also shown, with *BurgerTime* leading the bunch as far as originality and clever graphics go. In this one you are a chef who must construct hamburgers while avoiding predators. You run up and down ladders to release the various ingredients which all fall to the bottom and end up as a hamburger deluxe. In *Domino Man* you set up a domino chain (big deal) and in *Blueprint* you're a hapless carpenter trying to put together some sort of unknown device. You run into houses littered across the screen and drag out parts which plug into spaces on the blueprint. Every once in a while, a monster jumps across, knocking loose all the parts you've so painstakingly placed.

As expected, Atari had some blockbuster entries. First, and most beautiful, was *Quantum*, a vector game which resembles *Tempest* in its color scheme and graphics. Using a trackball, you control a space lasso which you must wrap around celestial points of light. When the front of the line touches the tail end, an explosion occurs within the loop, destroying whatever's inside.

Also from Atari was: *Millipede*, son of *Centipede*, with the added attraction of DDT bombs; *Liberator*,

which features a globe of the earth and *Pole Position*, an absolutely realistic driving game in which you sit in a "car" and negotiate the hairpin curves of the Fuji Speedway. The graphics are so realistic that the background shifts position as you round curves, Mount Fuji appears and disappears and billboards loom in the distance, readable only when you get close enough (most of them say "Atari," by the way).

Another star of the show was *QB-3* from Rockola. Rockola, famous for its great pinball games, entered the video game field last year with *Eyes*. *QB-3* shows they're here to stay. It's a vector game in which you are trapped in a space cube and must shoot points and stars of light. After clearing one side of the cube, you actually rotate it to get to the next wave. It is an incredible game that is just slightly reminiscent of *Robotron*.

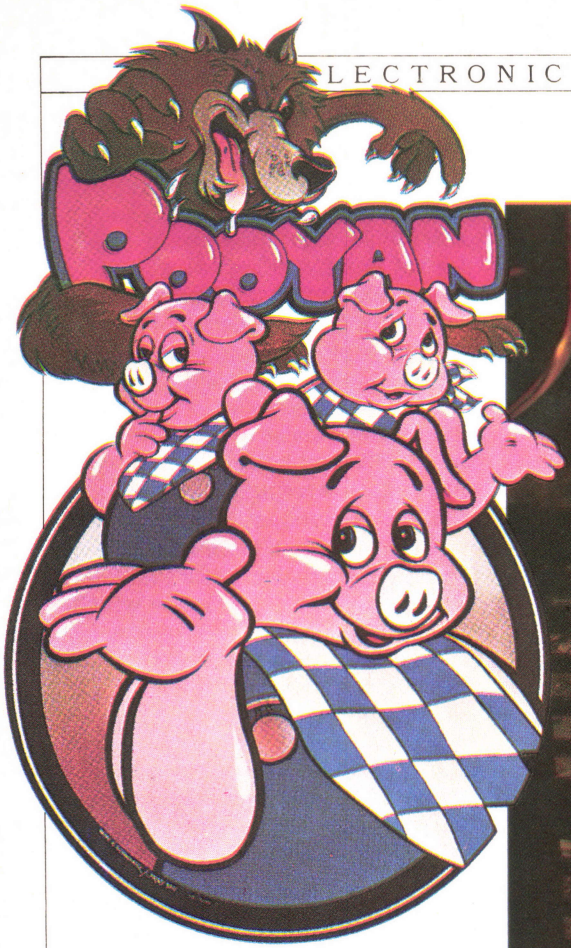
Stern showed *Rescue*, an excellent helicopter rescue game which really demonstrated the quantum leaps 3-D effects have taken in arcade technology. You pilot a helicopter and have to destroy enemy copters as well as rescue floating paratroopers who have (poor things) been shot down and are flailing around in the water. The scenery is breathtaking.

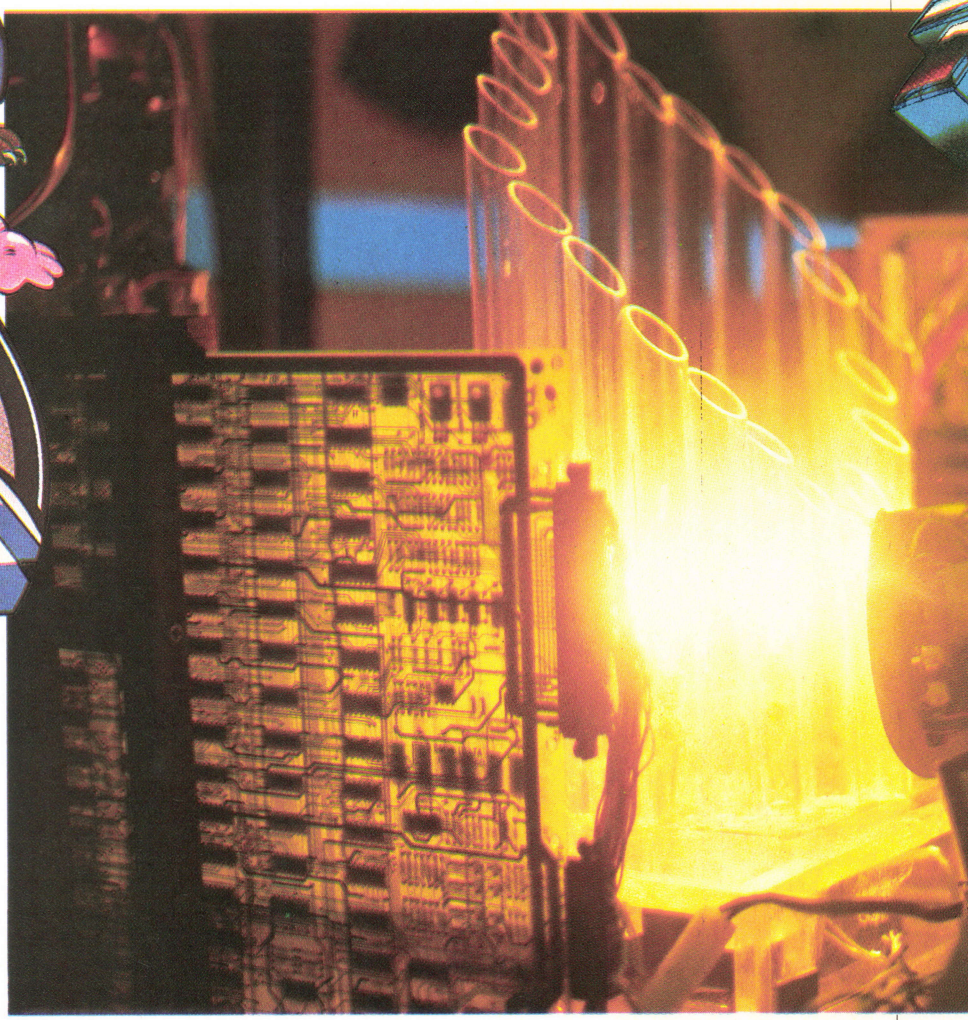
Also from Stern came *Pooyan*, which in Japanese means "little pigs." This game deals with three little pigs protecting themselves from wolves who, apparently, are part-time hot air balloonists. The third new entry was *Dark Planet*, a feeble attempt at a 3-D game which was nothing more than a hi-res spaceship superimposed over a drawing of a rock.

Unfortunately, Taito, which last year gave us such innovative and challenging games as *Qix* and *Jungle Hunt*, came up with only two disappointing games. The first, *Pirate Pete*, is simply a seagoing imitation of *Jungle Hunt* without the vine swinging sequence. At least they freely copied from their own game instead of copying someone else's popular theme.

Also from Taito was a rather drab combat game called *Front Line* in which you, dressed in red, white and blue (excellent camouflage), battle enemy soldiers.

Nintendo, capitalizing on the *Donkey Kong* success, introduced *Popeye*, in which you, Popeye, run up and down stairs catching Olive Oyl's kisses and avoiding Brutus. While the graphics are exactly like the cartoon, the game theme is nothing new.

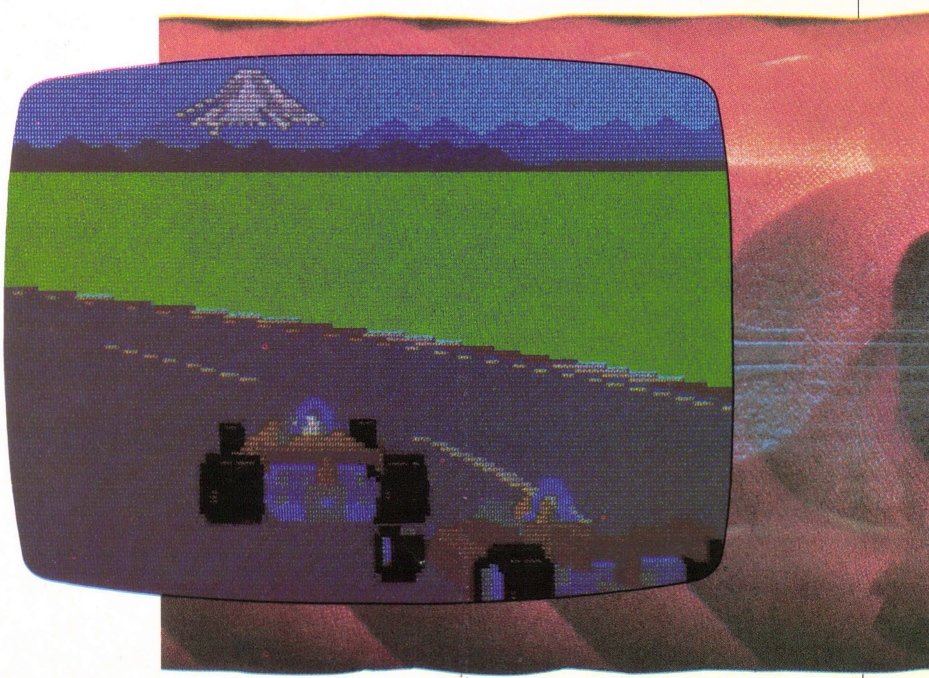


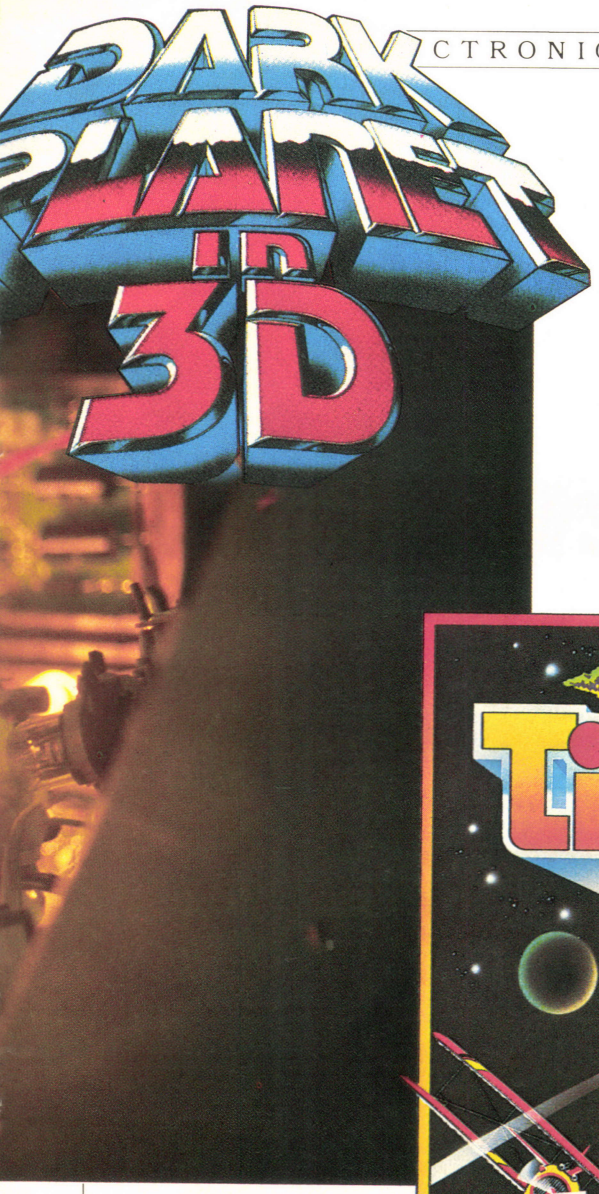


One of the most exciting introductions came from Centuri. Called *Time Pilot*, it takes the simple shoot 'em up format and gives it a wonderful new twist—time travel. You are a pilot and, when the game begins, you are fighting bi-planes in 1910. Each screen after that takes you to another time zone from 1940 through 2001 where you must fend off flying saucers.

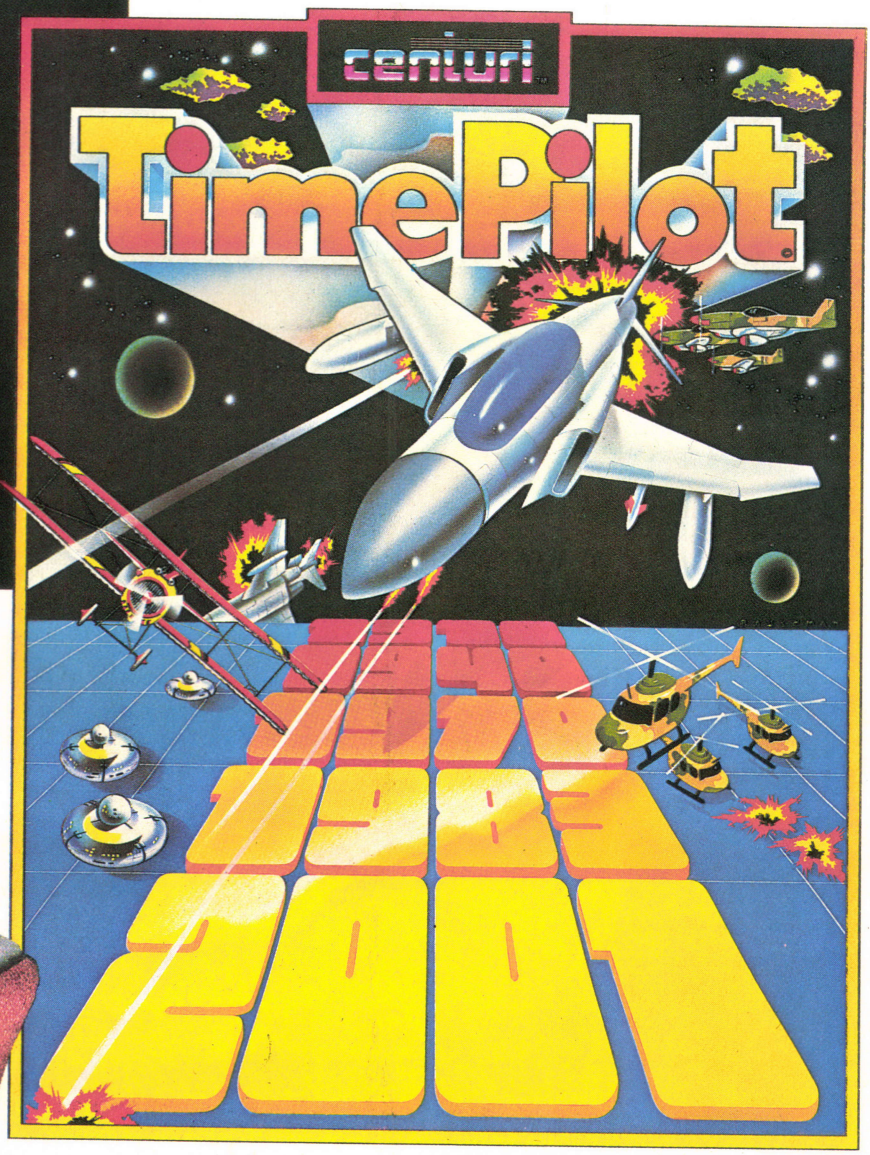
On a more whimsical note is *Q-Bert* from Gottlieb. Q-Bert is a charming little character who is mostly nose. His mission is to hop from cube to cube on a triangular formation that is floating in space. If you jump off, Q-Bert falls into blackness, shrieking. While he's jumping, coiled snakes and bowling balls fall on the steps as well. If Q-Bert lands on the same step at the same time as one of these unpleasant characters, he's crushed and (and this is the best part) he curses—a little balloon filled with "#!?@$" appears and he makes small, chipmunk-like sounds. If 1983 has a *Pac-Man*, *Q-Bert* may be it.

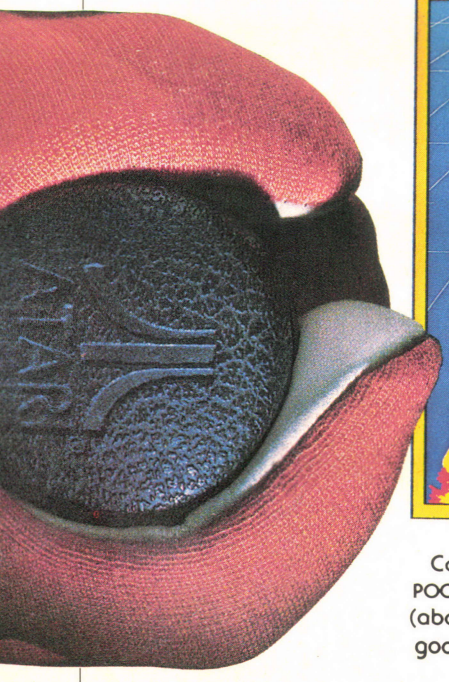
All in all, it looks like an explosive year at the arcades and certainly many of the introductions will be worth the expense of quarter, after quarter, after quarter.□





Future Hits	Future Misses
BUCK ROGERS *(Sega)*	**SUPER PAC-MAN** *(Midway)*
QUANTUM *(Atari)*	**BABY PAC-MAN** *(Midway)*
QB3 *(Rockola)*	**SUPER ZAXXON** *(Sega)*
Q-BERT *(Gottlieb)*	**MILLIPEDE** *(Atari)*
POLE POSITION *(Atari)*	**DARK PLANET** *(Stern)*
BURGERTIME *(Midway)*	**POPEYE** *(Nintendo)*
RESCUE *(Stern)*	**PIRATE PETE** *(Taito)*
BLUEPRINT *(Midway)*	**SINISTAR** *(Williams)*
RESCUE *(Stern)*	**MR. DO** *(Universal)*



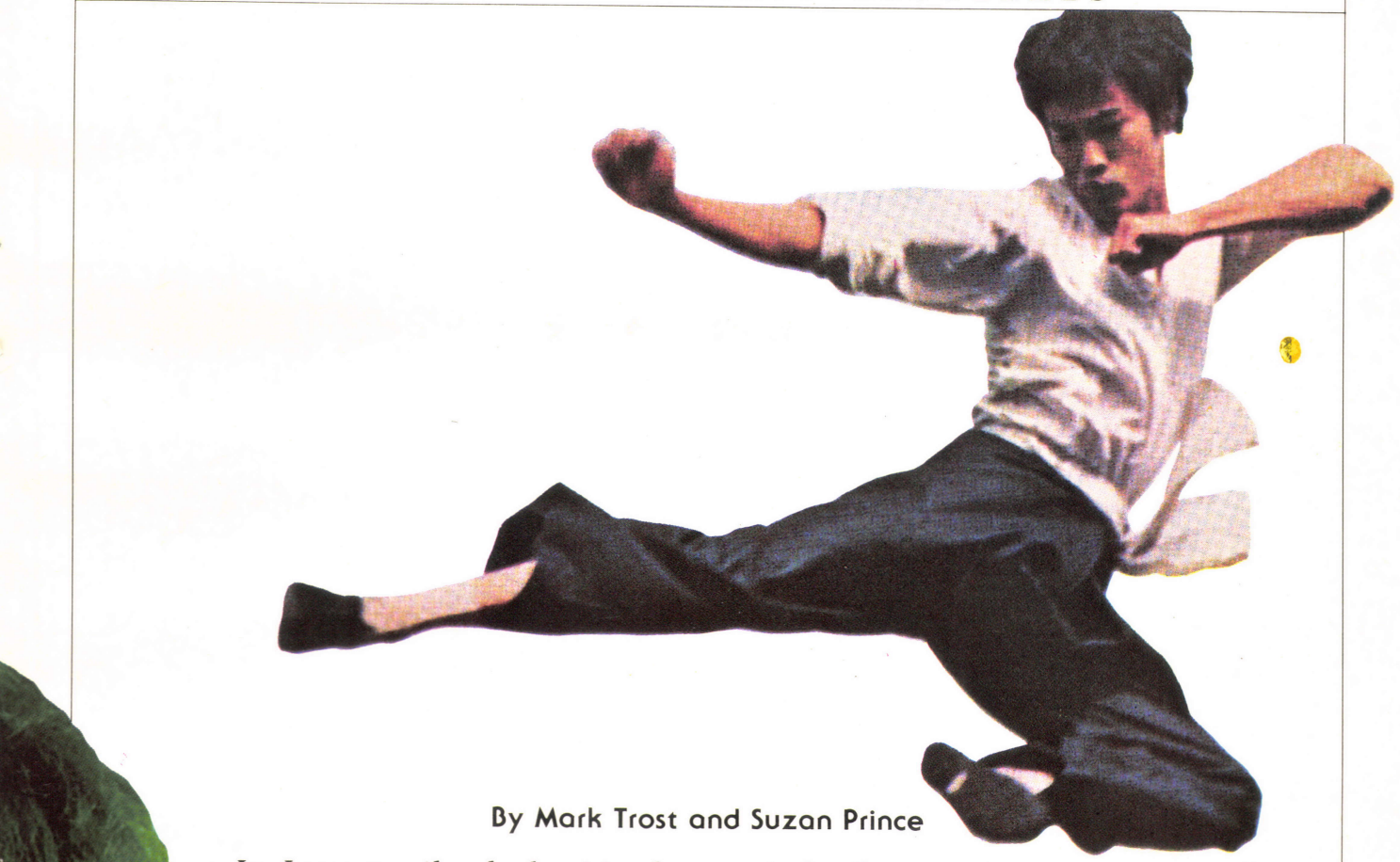


Coming soon to an arcade near you (if they haven't already arrived): Stern's POOYAN (upper left), Atari's POLE POSITION (lower left), Stern's DARK PLANET IN 3-D (above left) and Centuri's TIME PILOT (above). Although many of the games were good, not all of them will be winners. For our prediction of this year's hot titles, refer to the chart at the top of the page.

COMING ATTRACTIONS

On the home front: hot home games of 1983

This year's games revealed!



By Mark Trost and Suzan Prince

In January, the darkest trade secrets for the year to come are revealed at the biggest trade show of all. Ordinary citizens are barred from entering but we were able to attend and we've chosen to let you in on what's in store for you in home games this year.

Say it again, Sam! The hottest hardware of all are voice and speech synthesis peripherals. Most of the major manufacturers nowadays are into artificial voice add-ons or sound-enhanced cartridges. In software, the news is sheer quantity with dozens and dozens of new adventure, chase and space games—enough to satisfy the worst (or the best) addict. This year, to be sure, you'll be experiencing new games from proven sources like Atari and Activision, but there are lots of new guys on the block.

Atari

New from the industry leader, Atari, is a midsized computer system that fits in-between the model 400 and model 800 in terms of price. The new system runs about $400, features a full typewriter keyboard and is compatible with all 400/800 software. Other assorted product introductions included the Voice of Atari, a speech and sound synthesizer for the 5200 game unit.

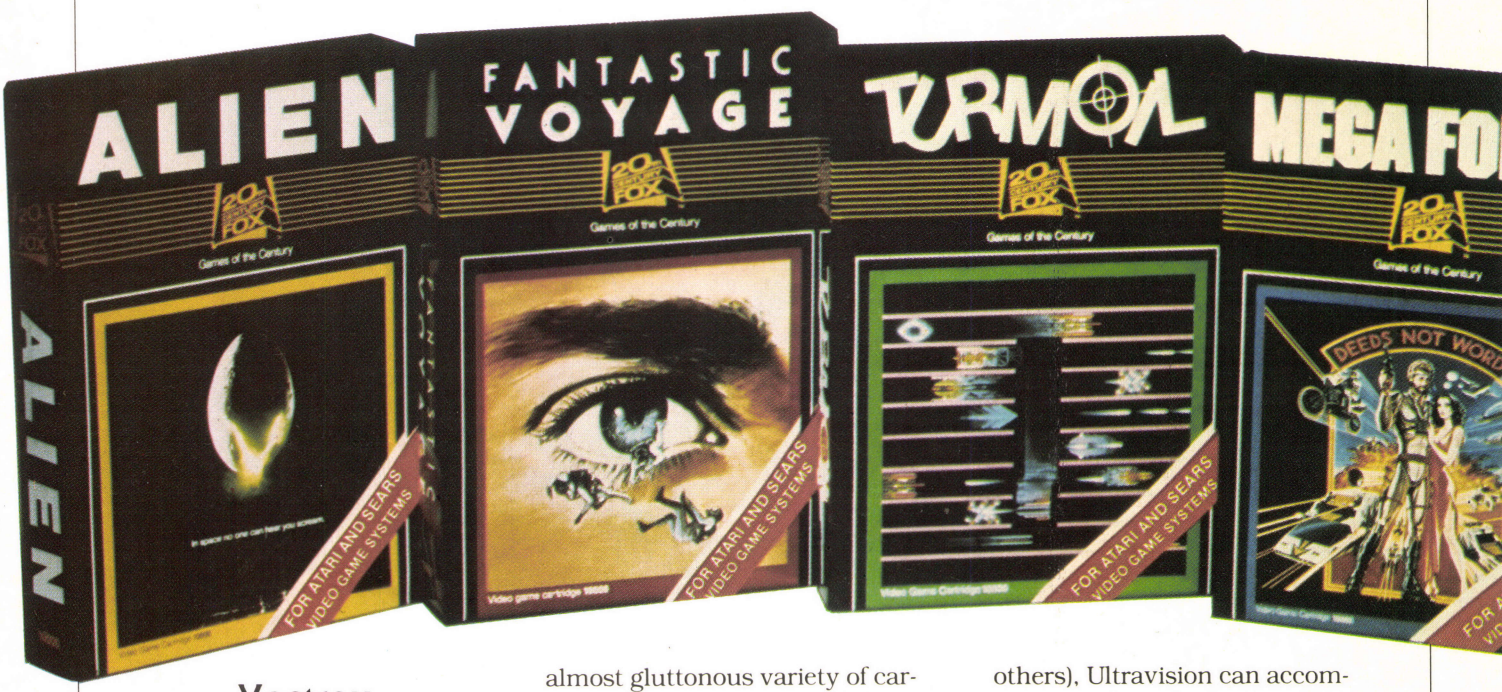
Expect to see an externally redesigned Atari System 2600 VCS. The company decided to update its oldest model (circa 1977) for decoration purposes only, replacing the wood grain finish with sleek, black hi-tech plastic much like the System 5200. The price remains at $130, and may even drop in coming months.

A trackball-type controller (which also sports joystick and keypad controls) has also been unveiled for the VCS, as well as a special handset for preschoolers and others with little fingers. The latter is intended for use with Atari's new line of Children's Television Workshop-based educational games. Five releases for ages three to seven were demonstrated, including *Monkey Music*, *Alpha Blast*, *Oscar's Trash Race* and *Cookie Monster Maze*.

Spectravision

In addition to three new games, Spectravision introduced its new under-$300 computer. The model SV 318 will reach the market sometime in March with 14 peripherals including a $499 dot-matrix printer, a seven slot super expander, a dual channel cassette drive and a disk drive. It comes with 32K RAM built in and can be expanded to as much as 144K RAM.

Also available is a $129 sensor touch graphic tablet which, through the use of a light pen, enables users to render intricate graphic designs. Over 100 software programs will be available through Spectra Video and, since the computer has a CP/M operating system, thousands of other programs will also be compatible with it.



Vectrex

Also on hand was the GCE Vectrex self-contained video game system with a new voice synthesis interface plus six new high-res games including: *Buster*, the hair-raising adventure of a guy bearing the title name and his gal Molly; *Flip-Out*, a video pinball challenger; *Fortress of Narzod*, where you must wend your way down a path fraught with enemies and obstacles; *Soccer*, with two variations (Sock-It and Heads Up); *Bedlam*, a reverse *Tempest* challenge; and *Web Warp*, where you, as an innocent bat, must escape the evil clutches of a nasty spider's web.

At least 22 software specialists, from Activision to Zimag, were on hand showing virtually every conceivable type of game from the classic space battle program to the already maligned "adult" cartridge.

After taking it all in and playing it all out, some interesting trends emerged. The success of *Dungeons and Dragons* has instigated a host of look-alike and play-alike games. The same goes for *Zaxxon*. Players will have no trouble finding cartridges offering variations on the "running the gauntlet via spaceship" theme.

We've also noticed game designers have stopped dissecting ants, frogs and flies and started eating lunch. The number of games with food themes could easily feed a small African nation. There was an almost gluttonous variety of cartridges asking players to defend their picnics from flies (ah-hah, they haven't given up on vermin yet), place cakes in boxes before they fall off the assembly line, and eat or get rid of all of Mama's cooking before the table. . . or player. . collapses.

If you're on a diet you may want to steer clear of these games and go to the movies. Many new game software entrants expanded on the character or movie-inspired cartridge motif by offering everything from *Flash Gordon* to *Flesh Gordon*.

All of this electronic fun (to coin a magazine's name) isn't limited to the Atari 2600. Many software companies announced they will make their games available in the Intellivision and even ColecoVision formats.

Ultravision

One newcomer is Ultravision, a company that set out to offer ultimate software compatibility, not just with Atari VCS products, but with those made for the Apple II and other systems as well. Ultravision's new $499 Video Arcade System features a self-contained, one-piece console with a built-in nine inch (diagonal) color display monitor (that's a real computer monitor, folks—no TV hookup required) and a special sound system. With 64K RAM and a very advanced 6502 microprocessor (the same one used in the Apple II among others), Ultravision can accommodate selected programs compatible with Apple II, TI-99/4A, Atari 800, TRS-80 Color and the VIC-20.

Parker Brothers

While Activision and Imagic prefer to make up their own characters and game scenarios, some companies have decided to stick with known commodities. As in the past, Parker Brothers will base their 1983 games around established arcade titles and characters such as *Q-Bert*.

Their first cartridge will also be the video game field's first prequel—*Star Wars - The Jedi Arena*. Here, Luke (that's you) attempts to master the light saber under the guidance of Obi Wan Kenobi. For the younger set, the company will bring out the video adventures of *Strawberry Shortcake*, quickly followed by war-loving *GI Joe*. By summer time, James Bond and the Incredible Hulk will be on hand in a pair of adventure games.

Imagic

Imagic, which made itself a name to be reckoned with via last year's *Demon Attack* for the Atari VCS

There were virtually hundreds of new games as well as several new computer entries at the show.
Above: ALIEN, FANTASTIC VOYAGE, TURMOIL and MEGA FORCE from Fox.
Right: Spectravision's new under-$300 computer.

and Intellivision, announced it will spread the wealth by releasing the game in Odyssey², Atari 400/800 and VIC-20 formats. In addition, the company showed Atari- and Mattel-compatible versions of *Dragonfire* and said it will offer a dozen Intellivision games before the end of the year.

CommaVid

Just in case you're still hungry, how about taking CommaVid's *Cake Walk*, which finds you catching cakes before they fall from a conveyor belt? The company's game programmers have also been playing *Zaxxon* and *Dungeons and Dragons*, as illustrated by spin-off introductions dubbed *Stronghold* and *Underworld*.

Data Age

Data Age spent most of the show showing off the first rock 'n' roll video game, *Journey Escape*. The game, which to the untrained eye would seem to be little more than another VCS chase scenario, is something different to the trained ear. As the game progresses, those familiar with the Journey album will hear strains from the group's hit songs. Also new from Data Age—*Bermuda Triangle*, *Frankenstein's Monster* and *Secret Agent*.

Odyssey

The biggest news from Odyssey's vantage point (besides a slew of new voice/sound- and color-enhanced game cartridges) is the Odyssey³—a step-up full computer system retailing for around $200. The system features high-resolution graphics, a full alpha-numeric typewriter-style keyboard and best of all, what the company calls "frontwards-backwards" compatibility with the Odyssey² home game system. That means the entire Odyssey² game library can be played on the Odyssey³ and any games developed for the newer model can be played on the Odyssey².

Additionally, Odyssey³ contains terminal capability for remote database communication with such information networks as The Source. Soon after the unit begins shipping (around midsummer), Odyssey will make available a low-cost telephone modem and an Odyssey³-compatible Voice and Sound Module. You'll find Odyssey³ in computer specialty stores as well as department stores when it becomes available.

Activision

Undoubtedly, the most awaited games are those from Activision. Since its inception, the firm has shown constant innovation and 1983 promises to be no exception. The previewed programs promise to blitz the gamer by land, sea and air.

By land it's *Spider Fighter*, a *Centipede*-style game in which swarms of spiders hatch all over the screen and turn a peaceful orchard into a war zone. The attackers try to steal your fruit and you have to use your remote control bug blaster to get them before they get you. By sea you'll see *Seaquest*. Here's one game not recommended for claustrophobics as video games reach new depths of excitement. You command a submarine sent to rescue divers with treasure. Of course, you have to stave off the obligatory enemy subs and ship crunching sharks before you suffocate! Finally, by air, there's *River Raid*, an *Apocalypse Now*! inspired game in which you fly over a river and attempt to destroy enemy bridges and fuel dumps. At the same time that you do this, you must avoid wave after wave of deadly enemy ships and enemy choppers.

Continued on page 92

output input

Does 400 + 800 equal 5200?

I found your OUTPUT/INPUT article very interesting and informative. The only question I can't seem to find an answer to is: What's the difference between an Atari 2600 and an Atari VCS, and can you play cartridges made for an Atari 2600 on an Atari VCS? I need this answer because I am planning on buying an Atari VCS and want to know if it is worth it.

Mike Aragona

Thanks for the compliment. Now, regarding your question, the Atari 2600 and VCS are one and the same. I know it's confusing to refer to them by two different names. The term 2600 was put into practice when Atari came up with their 5200 machine. Both, you see, are technically VCS systems (Video Computer Systems) and the numbers are simply used to make the distinction between the two clearer. Naturally, cartridges for the 2600 and VCS are compatible. They're the same and, you'll be glad to know that there are more cartridges available for the VCS (or 2600) than for any other system currently on the market.

Regards, Jay H. Wald. Please. Cut it out and retitle your column INPUT/OUTPUT. Also annoying as hell. Your idea of placing the answer before the question in your OUTPUT/INPUT column is cute.

Dear O/I

As you can see, we already have changed the Q&A order. We loved your letter.

I've heard about ColecoVision's expansion module which allows you to play Atari VCS cartridges on it, but why doesn't Atari make an expansion module so that you can play other types of cartridges on an Atari VCS?

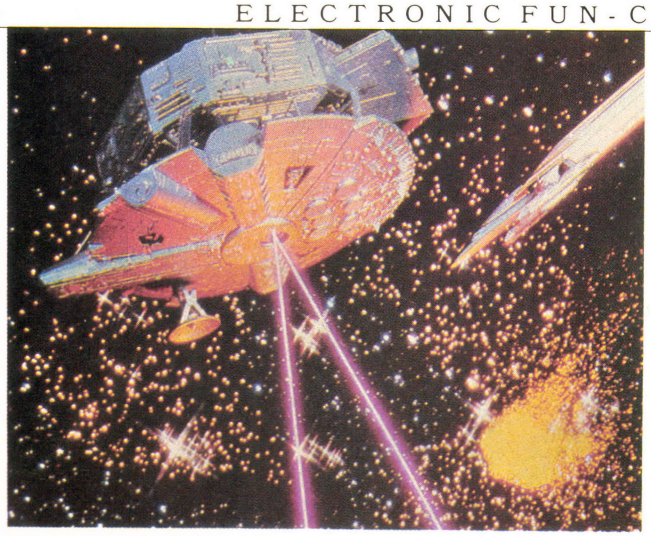
Kermit Shannon Kwan
Mississippi

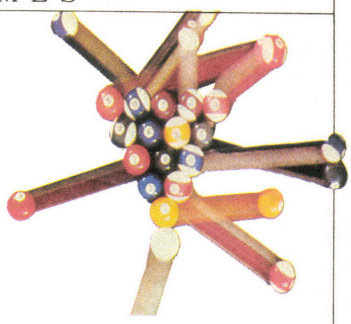
Probably because all the other companies are making expansion modules for Atari. See, Atari has most of the games and most systems currently owned are Atari units. As long as more people own Atari, Atari doesn't *have* to make any expansion modules for other systems' cartridges. The reason people do that is to sell more of their own equipment. Atari is selling the most, so there's no reason why they have to go to the added expense of making an adapter. However, there will be a VCS adapter for the Atari 5200 system. That means you'll be able to play all your favorite 2600 games on the new system as well.

Why is it that the independent software publishers (i.e., Imagic, Activision, etc.) usually have games with superior graphics and game play to those sold by the game manufacturers themselves?

Raymond Forbes
Illinois

That's a tough question. And we're not sure it always holds true. A long time ago, when Atari was the only manufacturer making games for their system, there was no point of comparison. That's one reason why Atari graphics didn't have to be outstanding to sell. A second reason could be that Atari has all the arcade titles. People tend to buy games based on their names and if they can get a, say, *Defender* or *Pac-Man* to bring home, chances are they're not going to cast a critical eye on the graphics at the start. Most independent companies don't have as many arcade titles and have to compete against well-known, popular games with games of their own that no one has ever heard of before. For that reason, the independents have to be sure their games offer something besides popular titles and what they offer is better game





play and better graphics. In addition, because they don't have to work on hardware as well, they can concentrate all their efforts on the software.

To be fair to Atari though, many of their newest releases have had much better graphics than earlier carts did. Perhaps the competition is affecting them now.

I am thinking about getting an Atari 400 microcomputer. Is there a disk system that you can use on it and can you use things (joysticks, cartridges, etc.) from the Atari 2600?

Doyle Detweiler
Kansas

As far as disk systems go, the Atari 810 disk drive can be attached to the 400 computer but only if it has a minimum of 16K. (The earlier 400's have less than 16K.) As very few games and programs are available on disks with so little memory, it might behoove you to invest in the Atari 800 which can handle up to 48K of memory and for which the added expense of a disk drive would be more sensible. Spending $500 on a disk drive for a computer which costs you under $300 seems silly. In regard to the peripherals such as joysticks, all controllers from the 2600 can be used with both the 400 and 800 computers. Cartridges, on the other hand, are not compatible.

Can you use the cartridges for the Atari 400/800 systems on the new Atari 5200 Home Entertainment System and can you use Arcadia's Supercharger on the adapter for the Atari 5200?

Kevin Steiner
Ohio

No and yes. As with all the Atari consoles, the cartridges are *not* interchangeable. Although many carts for the 400 are compatible with the 800 (and vice versa) you cannot play 400/800 cartridge games on the 5200. Carts for the 5200 are much bigger and consequently, won't fit the cartridge slots on either of the computers. Many of the same games are available in both formats, though.

According to Don Thompson of Arcadia (now Starpath, by the way), you can use the Supercharger on both the ColecoVision and 5200 adapters. As long as the cartridge fits in the adapter, so will the Supercharger unit.

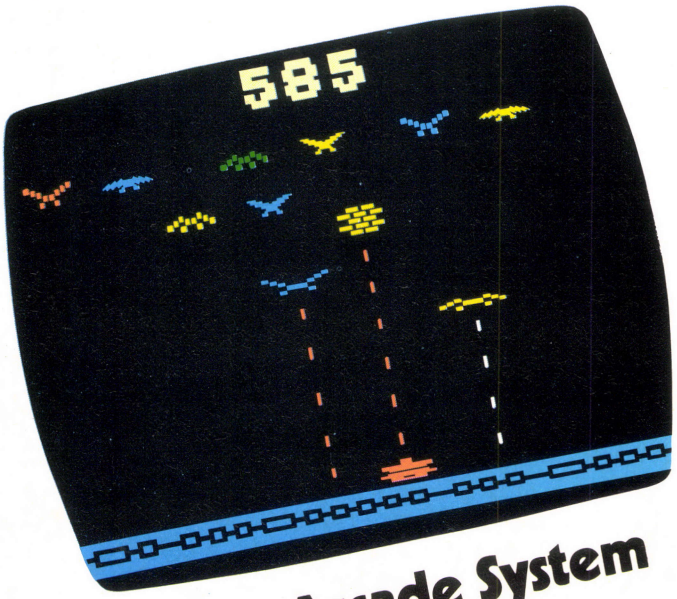
I own an Intellivision system and I was wondering why Atari has so many popular arcade titles in their cartridge line up and Intellivision has only one.

Randy Pavlow
Pennsylvania

Well, there's at least one logical reason and that is that Atari has a definite advantage over Mattel because they have their own coin-op division as well as a home game division (not to mention their own computer division). Many of the most popular arcade titles are from Atari in the first place and all the Atari home division has to do is translate the game from coin-op to home format. They don't have to go through all that licensing rigamarole that other companies do.

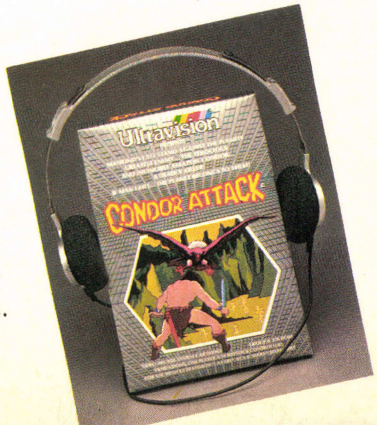
Do you have a question about video games or computers that needs answering? Send your questions to: Electronic Fun, *350 E. 81st St., New York, NY 10028.*

WE PUT IT ALL TOGE



It's an Arcade System

It's a Color TV



We've got two big hits of our own that will put you on the edge of your seat, "Condor Attack" and "Karate." Many more are scheduled for release in '83.

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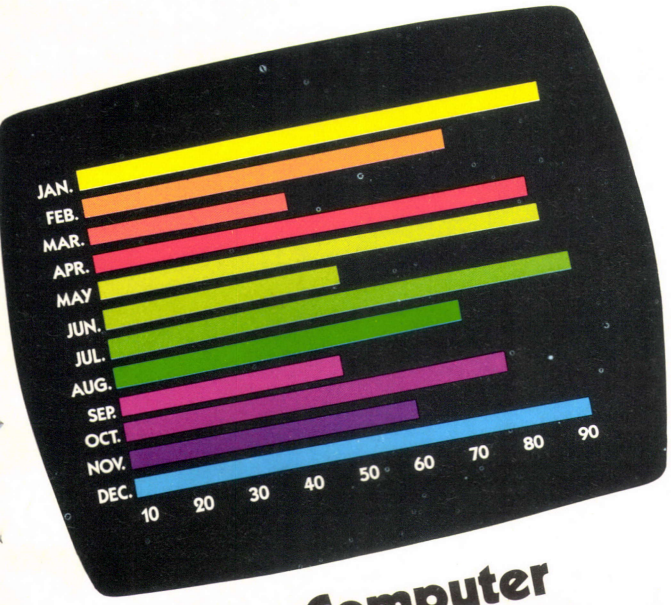
ColecoVision™ is a trademark of Coleco Industries.

THER JUST FOR YOU!



It's a Computer

It's Ultravision™!

It's an Arcade System. The only thing the arcade games have that Ultravision doesn't have is a coin slot. This revolutionary new system doesn't just claim to duplicate the arcade experience...it surpasses it! And it's portable, A/C or D/C. Another plus is the 3 dimensional graphics, zoom, and other special visual effects. The unique built-in sound system simulates echo and reverberation for authentic reproduction of explosions, cheering crowds, music, etc. And, if you want, you can hear it all without disturbing others.

It's a Color TV. Better than most, with 2 independent systems to guarantee the sharpest resolution for the Computer/Game systems and TV viewing.

It's a Home Computer. When the game-playing is over and your ready for serious business, power-on to our optional Master Keyboard. Our state-of-the-art Microprocessor and the RAM packed (64K) internal components turn this baby into one of the most powerful personal computers on the market.

The games you can play. If you think coin-op arcade games are exciting, wait until you see the enthusiasm we develop with our dynamic visual effects. And if that's not enough, you can also play all Atari and ColecoVision compatible games through our external module. We've got two big hits of our own that will put you on the edge of your seat, "Condor Attack" and "Karate." Many more are scheduled for release in '83.

Ultravision™

"Light years ahead of the rest."

ULTRAVISION, INC., 161 ALMERIA AVE., SUITE 100-E
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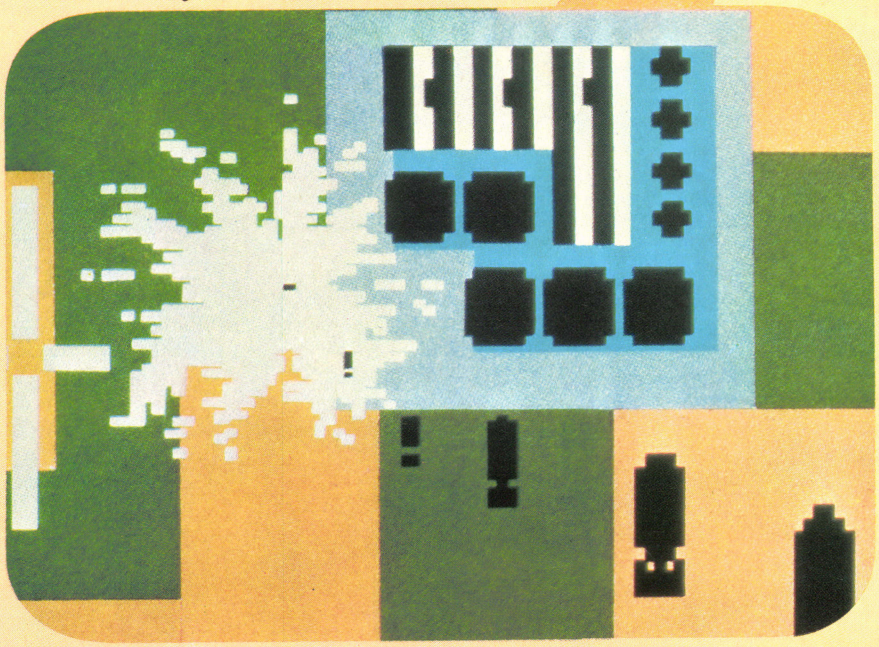
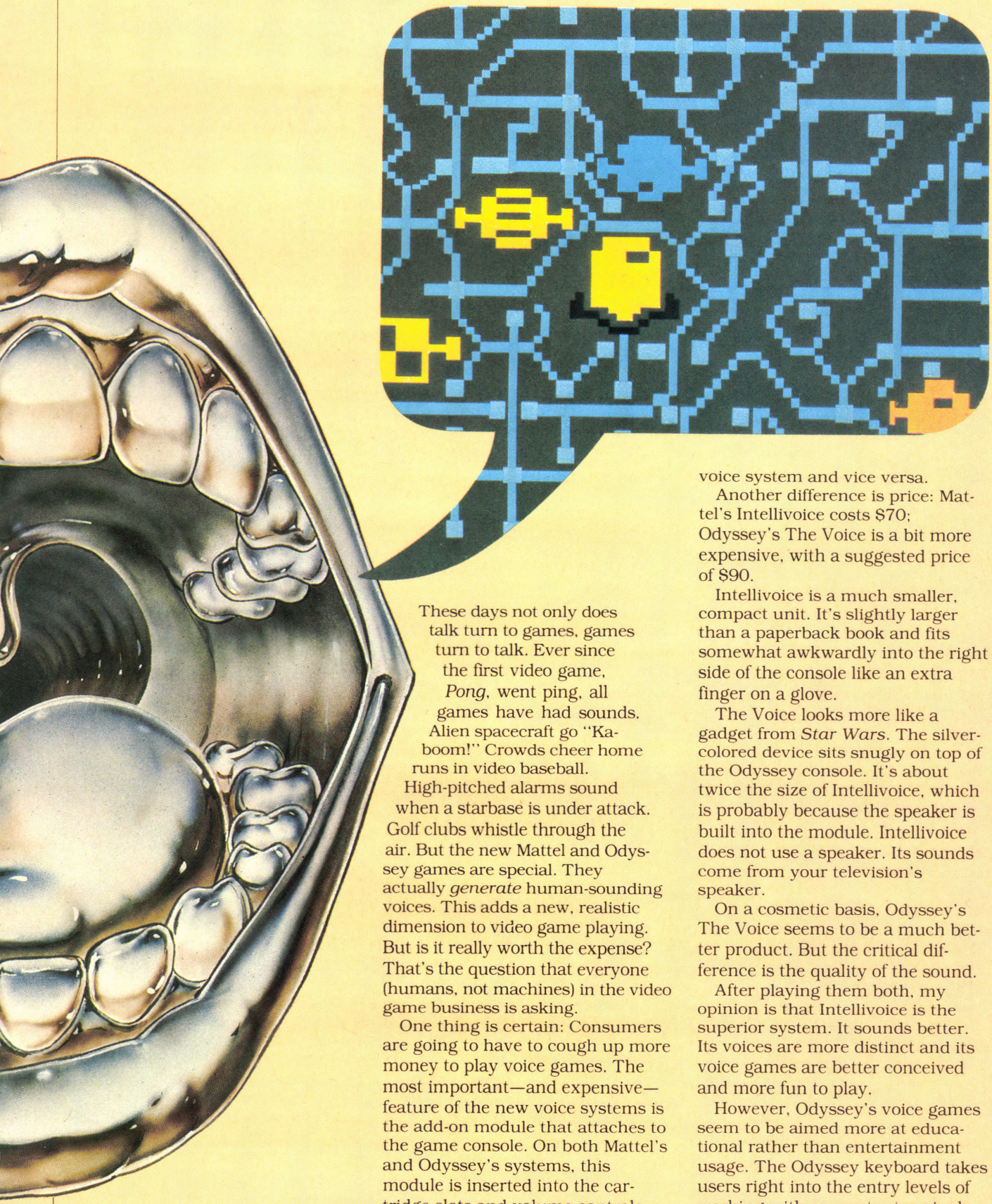
voice VS voice

by Howard Polskin

The Mattel-Odyssey talk-off

Like a flock of chattering parrots, talking home video games have found a roost in the electronics marketplace. Mattel and Odyssey have already created hardware with cartridges that simulate the sound of the human voice.





These days not only does talk turn to games, games turn to talk. Ever since the first video game, *Pong*, went ping, all games have had sounds. Alien spacecraft go "Ka-boom!" Crowds cheer home runs in video baseball. High-pitched alarms sound when a starbase is under attack. Golf clubs whistle through the air. But the new Mattel and Odyssey games are special. They actually *generate* human-sounding voices. This adds a new, realistic dimension to video game playing. But is it really worth the expense? That's the question that everyone (humans, not machines) in the video game business is asking.

One thing is certain: Consumers are going to have to cough up more money to play voice games. The most important—and expensive—feature of the new voice systems is the add-on module that attaches to the game console. On both Mattel's and Odyssey's systems, this module is inserted into the cartridge slots and volume controls. There are differences, however. Most importantly, Mattel's voice games don't play on the Odyssey voice system and vice versa.

Another difference is price: Mattel's Intellivoice costs $70; Odyssey's The Voice is a bit more expensive, with a suggested price of $90.

Intellivoice is a much smaller, compact unit. It's slightly larger than a paperback book and fits somewhat awkwardly into the right side of the console like an extra finger on a glove.

The Voice looks more like a gadget from *Star Wars*. The silver-colored device sits snugly on top of the Odyssey console. It's about twice the size of Intellivoice, which is probably because the speaker is built into the module. Intellivoice does not use a speaker. Its sounds come from your television's speaker.

On a cosmetic basis, Odyssey's The Voice seems to be a much better product. But the critical difference is the quality of the sound.

After playing them both, my opinion is that Intellivoice is the superior system. It sounds better. Its voices are more distinct and its voice games are better conceived and more fun to play.

However, Odyssey's voice games seem to be aimed more at educational rather than entertainment usage. The Odyssey keyboard takes users right into the entry levels of working with computer terminals that they are likely to encounter in school or work. This could be a plus for parents seeking to bring a

Jane Beaulieu

computer into the home under the guise of a video game.

But which are the best voice game cartridges to buy? Here is my rating in order of personal preference.

1) *B-17 Bomber* (Mattel) This is the most enjoyable and visually exciting of all voice games. It takes both strategy and manual dexterity to achieve the goal of bombing enemy targets in occupied Europe and then return to England. The game doesn't really take full advantage of the voice, but there are enough diverse elements in *B-17* to label it a voice game smash.

The user must make decisions such as how much fuel and how many bombs to carry and what speed and altitude to fly at. There are about five different screens that can be called up. Intellivoice warns you, the pilot, of approaching airplanes, upcoming targets and low fuel levels. The pilot must then hit the proper screen and take appropriate action. For instance, when Intellivoice says "Fighters, nine o'clock," you hit the nine o'clock button on the keypad to get the nine o'clock gunner's view of the approaching plane. Then it's up to you to blast the enemy out of the sky. Voices are clear and distinct throughout the game, but some are unnecessary. "Good shot" is a waste when you can clearly see that you've blown up an enemy aircraft.

It takes a lot of plotting to reach the targets and return home without running out of fuel. You have to respect the Mattel programmers for the conception and execution of this game.

2) *Type & Tell* (Odyssey) Very simple concept. Users type letters on the keyboard, which are then displayed on the screen. When the user hits the "Enter" button, The Voice then repeats exactly what the user has typed.

The screen holds 72 letters, which is enough for two short sentences or one long foreign name. The computer will read spaces between words and punctuation marks so it will spit out an audio version of what you've typed. Unfortunately, the words tend to sound like Darth Vader on quaaludes.

I guarantee that one of the first things you'll type out and listen to is the dirtiest, most disgusting sentence you can think of. After ten minutes of hearing your video game say things to you that would make a longshoreman blush, you might begin to realize the incredible educational possibilities of this "game."

3) *Space Spartans* (Mattel) The Pavarotti of voice games. The voices are varied and extremely helpful in aiding the user in combat against a deadly attack of alien space vessels. If the level of play matched the quality of the voices, this game would soar to the top of the heap of sound-module cartridges. Three different voices chatter away during the battle. The first voice (a sexy female) comes on soon after the game is activated and purrs, "Hello Commander. Computer reporting." Her voice is so flirtatious, you're tempted to ask her to join you for a slow trip around the dark side of Venus once the battle is over. Later, she reports on the status of various ship's systems that may have been damaged during the fight.

Another prominent off-screen personality is a deep male voice which chatters about energy levels and the number of alien vessels attacking. His voice is so clear that it can rattle off a sentence with a four-digit number like, "Energy level nine thousand, seven hundred and fifty-three," with absolute clarity. It's a pleasure to listen to a voice that's more distinct than that of most of my friends.

If you lose the battle, the last voice you hear is the alien commander's. He says "The battle is over," in a snooty voice filled with disdain and self-importance. He sounds just like a Los Angeles psychiatrist.

Unfortunately, playing the game is less of a joy than listening to it. Blasting the attacking ships is difficult because of an inferior aiming mechanism. After a while, it becomes tiresome warding off the attack which seems to come in lopsided flows favoring the aliens.

4) *Bomb Squad* (Mattel) Disarming a time bomb before it levels a city is the goal of this challenging game. In order to defuse it, the user must make a reasonable guess of the code number that stops it from ticking.

Luckily, Frank, the talkative demolition expert, is on hand (offscreen, because he's probably too chicken to get too close to the bomb) to assist you. First, he'll tell you what tools to use when the screen displays the bomb's circuit boards. Then he advises whether to repair or replace damaged components.

This voice game displays the greatest range of vocal emotions. Frank sounds enthusiastic. ("OK! OK!" he shouts when you've successfully replaced the right component.) And Boris, the mad bomber, has an appropriately evil, deep voice.

The game itself gets boring pretty quickly despite the sophistication of the voices. It's a chore replacing the many components of the circuit, even with Frank cheering you on. I would have settled for more play elements and less voice.

5) *K.C.'s Krazy Chase* (Odyssey) This is a good game, but a lousy voice game. It features that loveable Pac-Man cousin, K.C. Munchkin, going mouth-to-mouth with the Dratapillars of Venus. The player can choose among four different mazes, or even create his own maze. That's a nice touch.

The voice is the bad touch. It's totally unnecessary. When the game begins, you hear "Go." (Or maybe it says "Hello." The audio quality is so poor, you really can't be sure.) When K.C. gets gobbled, he says "Ouch. Oh, no." Big deal. Throughout the game, he keeps saying "Hurry. Run." Who needs to get hassled by this obnoxious-sounding creature?

In truth, this game is much better and less annoying when it is played with a muzzle on Mr. Munchkin's mouth.

6) *Nimble Numbers Ned* (Odyssey) There's a bit of entertainment sugar sprinkled on this educational pill. This game purports to be an educational math game for grades one to nine. But between lessons, a little man must jump over barrels onto numbered stones in a creek. He must time and gauge his jump to clear the barrel and land on the stone. Too far or too short and he takes a swim. That's the fun part of this game.

The rest of the time, the player tackles multiplication tables and tries to identify geometric shapes. The voice will ask something like "Is this a square?" when the shape of a triangle is blinking on the screen. After you hit the "No" button, the voice says "Right!"

This game is neither fun to play nor very educational. And the voice sounds like someone is talking to you from a faulty phone booth in the robot burial ground.

7) *Timelord* (Odyssey) Bad plot. Bad graphics. Bad voice. The triple play of video game shame. *Timelord* is a poor man's version of *Space*

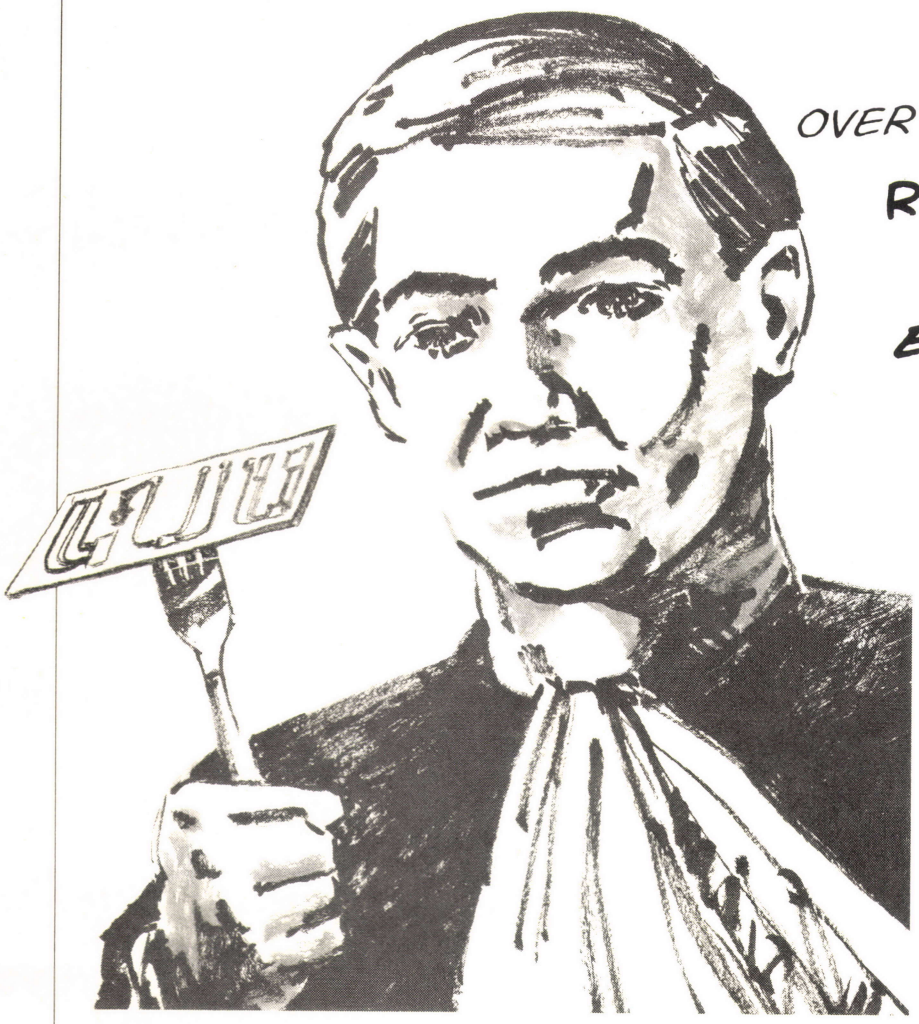
Continued on page 97

RIPOFF'S

Believe it or not!

CHUCK RUFINO of DIX HILLS, N.Y. PLAYED ***ZAXXON*** FOR 88 HOURS. ***WITHOUT STOPPING.*** WHEN HE WAS FINISHED, ***HE WAS TIRED!***

Drawings by Bob Winterson, Lettering by Janice Chiang



OVER THE COURSE OF A YEAR, **ROGER BROWN** of Silver Springs, Md. ***ATE AN ENTIRE PAC-MAN MACHINE!***

GORF SPELLED BACKWARDS IS FROG!!
ROBOTRON SPELLED BACKWARDS IS NORTOBOR!!
GALAXIAN SPELLED BACKWARDS IS HARD TO PRONOUNCE!!

DID YOU KNOW THAT AN INTELLIVISION CONTROLLER WILL FIT ***COMPLETELY*** IN THE MOUTH OF A ***THREE-YEAR-OLD-BOY?***

ARABELLA SMITH of Seward, Ne. GREW A CABBAGE IN THE ***SHAPE OF A COLECOVISION.*** "NEXT YEAR I'M HOPIN' TO GET A POTATO IN THE SHAPE OF AN ATARI EXPANSION MODULE," SHE SAID.

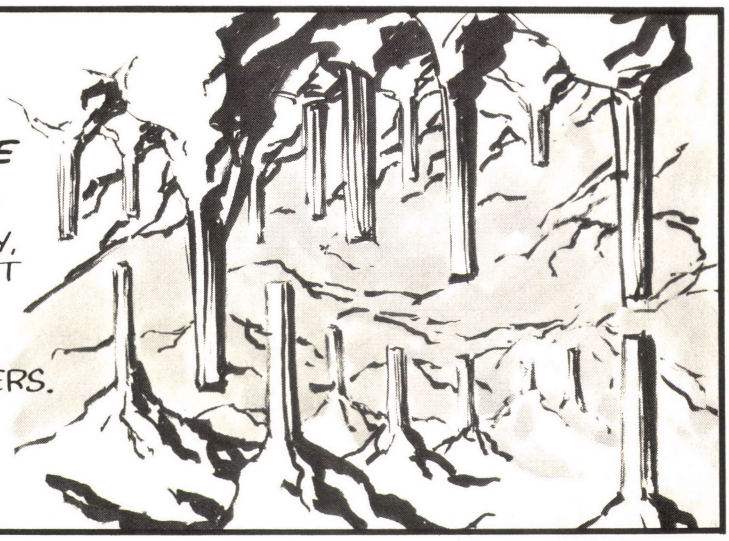
A TARI-COMPATIBLE TREE
Wilkes Barre, Pa.

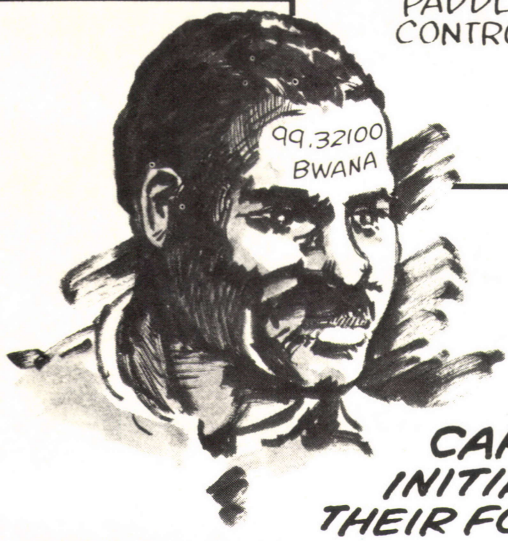
JAMES BARDWILL
14, of Encino, Ca.
THINKS HE'S
BERZERK.
HE HAS EATEN
NOTHING BUT
QUARTERS
SINCE HE WAS
11. (FOR
TWO GAMES
50 CENTS
IS
REQUIRED.)

IF YOU TAKE 25 WHITE RATS
AND LOCK THEM IN A ROOM
FOR 48 HOURS WITH A
TURBO GAME, ***THEY WILL***
GET GOOD AT IT.
DAMN GOOD!

CALVIN LOUIE WAS **RAISED BY A PACK OF ASTEROIDS MACHINES!** TO THIS DAY, THE ONLY WORDS HE KNOWS ARE **"PING!" "BLEEP!"** AND **"KA-POW!"**

STALACTITES IN A CAVE IN WISCONSIN **GROW IN THE SHAPE OF JOYSTICKS!** UNFORTUNATELY, THE CAVE MUST BE PLAYED USING THE PADDLE CONTROLLERS.

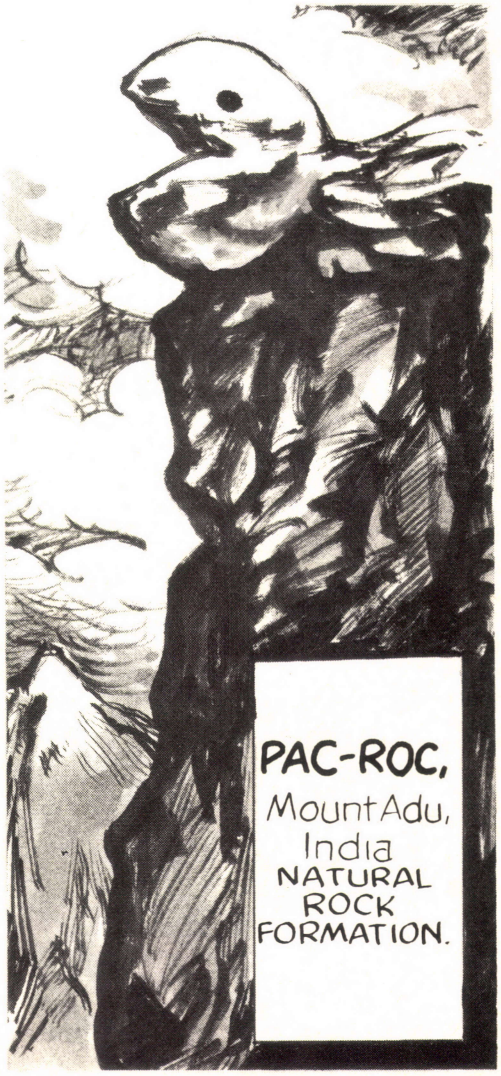




THE **FIRST VIDEO** GAME WAS INVENTED IN 393 B.C. **IT DID NOT WORK!!!**

SHILLUK TRIBESMEN of Africa, **CARVE THEIR INITIALS IN THEIR FOREHEADS** TO INDICATE HIGH SCORES AT **JUNGLE HUNT!**

MEMBERS OF THE OOMATOOM TRIBE OF GHANA WHO WANT TO IMPROVE THEIR SCORES, WHISPER THEIR WISH INTO THE EAR OF A SACRED COW WHO, *IT IS SAID*, ADVISES THEM **NOT TO USE THEIR SMART BOMBS UNTIL ABSOLUTELY NECESSARY!**



PAC-ROC, Mount Adu, India NATURAL ROCK FORMATION.

HOME

1. PITFALL! (A) (Activision)
2. DONKEY KONG (A) (Coleco)
3. PITFALL! (I) (Activision)
4. FROGGER (A) (Parker)
5. BERZERK (A) (Atari)
6. MICROSURGEON (I) (Imagic)
7. E.T. (A) (Atari)
8. PAC-MAN (A) (Atari)
9. YARS' REVENGE (A) (Atari)
10. REALSPORTS BASEBALL (A) (Atari)

ARCADE

1. MS. PAC-MAN (Midway)
2. JUNGLE HUNT (Taito)
3. DONKEY KONG JR. (Nintendo)
4. DONKEY KONG (Nintendo)
5. PAC-MAN (Midway)
6. MOON PATROL (Williams)
7. CENTIPEDE (Atari)
8. TRON (Midway)
9. GALAGA (Midway)
10. TUTANKHAM (Stern)

The arcadeTop Ten courtesy of REPLAY MAGAZINE, the coin-op Bible. The home games Top Ten was compiled by Walter Salm, who contacted retailers across the country. (A) indicates Atari VCS and (I) indicates for Intellivision.

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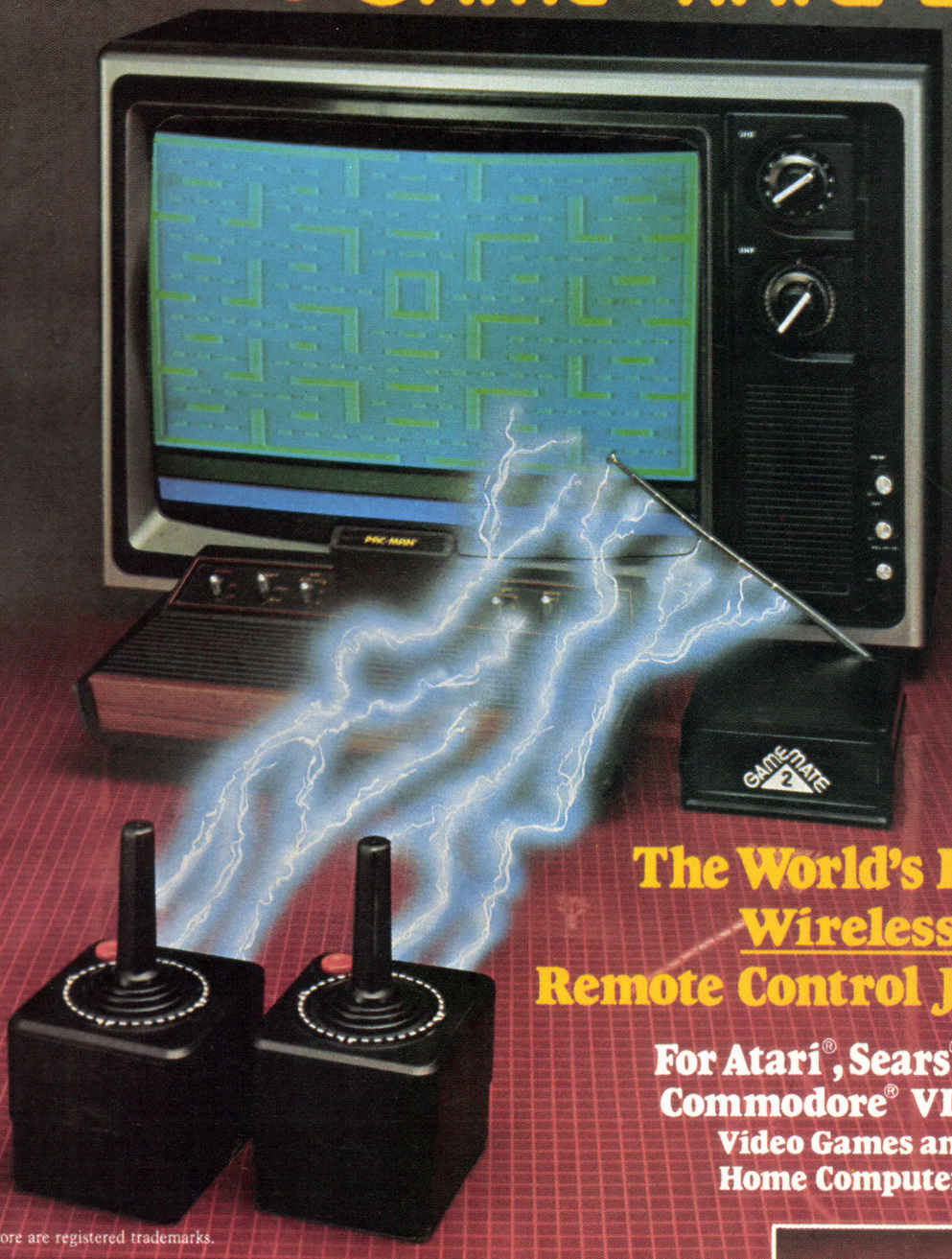
No More Wires.

Introducing GAME·MATE 2™



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For Atari®, Sears® and Commodore® VIC-20 Video Games and Home Computers

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Sit back...way back...and enjoy... The new Game Mate 2™ lets you enjoy the fun, the exciting action, the challenge of your Atari® Video Computer System, Sears® Tele-Game or Commodore® VIC-20 video games or home computers from up to 20 feet away without fussing and fiddling with ugly feet-entangling wires.

The Game Mate 2™ is sturdy built, easy to hook up, and won't interfere with your normal TV viewing.

You'll enjoy the same sharp colors and realistic sound effects, but with the 'long distance' fun of a lifetime!

Look for the Game Mate 2™ and other Game Mate™ accessories wherever video games are sold.

GAME·MATE™ VIDEO ACCESSORIES

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BAD NEWS FOR INTE

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So you think you can beat every game made for your Intellivision* system, huh?

Well, so did Billy Grubb up there.

Until he played IMAGIC'S® new games for Intellivision—the first games ever to unleash the enormous power locked away in every Intellivision system.

First, Bill played Demon Attack.® Wave after wave of deadly demons bombarded Bill with lasers. The tricky demons split in two, even let loose with a few fireballs. But somehow Bill managed to wipe them out and take off into space searching for the demons' home base.

Unfortunately for little Billy, he found it.

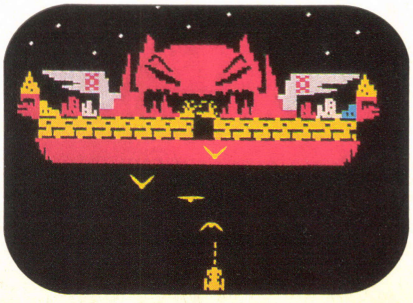
Next, Bill gave Atlantis a shot. The Gorgon attack vessels filled the skies above the underwater city of Atlantis. Bill fought back from his two missile posts. As night fell, and the Gorgon death rays took their toll, Bill launched his star fighter and attacked the enemy head-on in the air.

But little Billy was no match for the fierce Gorgon warriors. No match for IMAGIC.

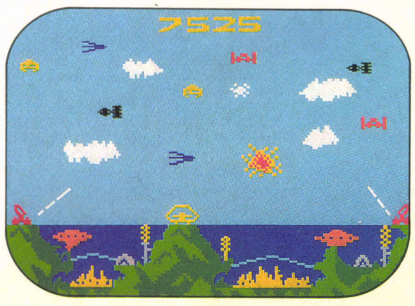
By now, Billy was feeling a little sick. He was ready for Microsurgeon.™

Using a surgical robot probe, Bill began exploratory surgery on the

Demon Attack



Atlantis



LLIVISION OWNERS.

patient. The status report warned of serious problems in the heart and lungs. Bill raced down the circulatory system fighting white blood cells and bacteria all the way.

The beating of his patient's heart was deafening as Bill raced against the clock to remove the cholesterol blocking the arteries. Then the beating stopped.

And so did Billy.

Next, Bill grabbed for Beauty & the Beast. "This'll be easy," he said with his last glimmer of cockiness.

It wasn't.

After climbing up a building through dozens of open windows, jumping over rolling boulders, narrowly avoiding vicious rats, and ducking under deadly birds, Bill was still four stories away from the beast that was bullying his best girl. Then he fell off the ledge.

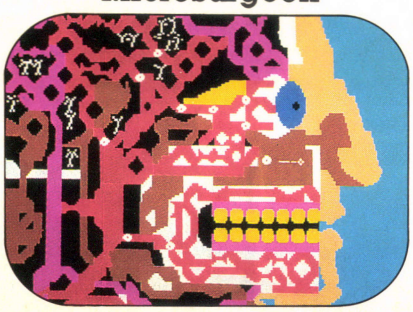
Bye-bye, Biiiiiiiiyyyyyy!!!!!

Let this be a warning to all you cocky, know-it-all, self-proclaimed video game wizards out there:

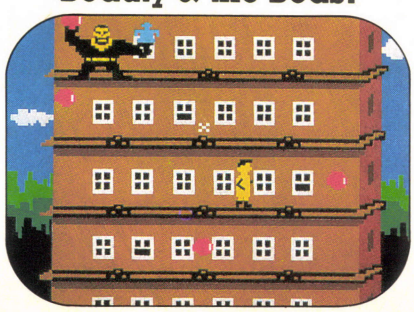
Laboratory tests have proven that IMAGIC games, when played in large doses, may be hazardous to your self-esteem and cause chronic Hugedigitosis (sore thumb).

In other words, our games are created by experts for experts.

Microsurgeon



Beauty & the Beast



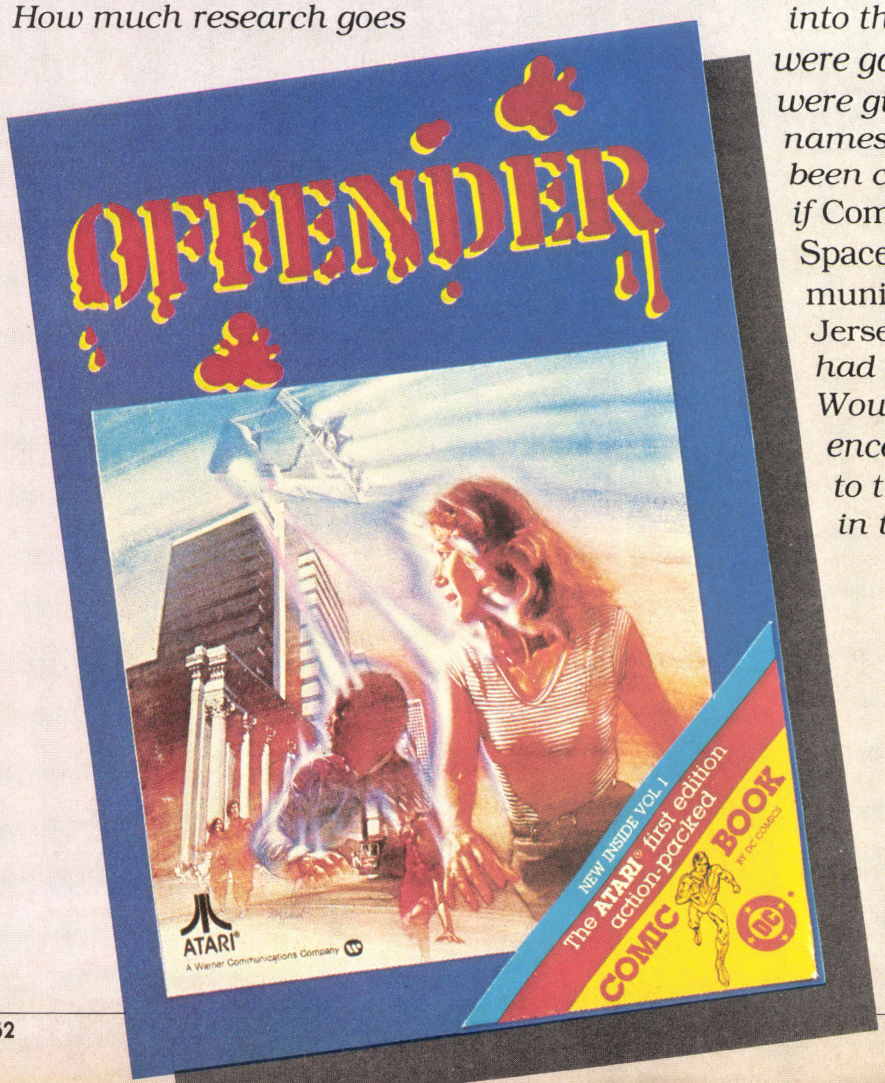
IMAGIC

Created by Experts for Experts.™

The NAME game

What if they called Freeway "Chicken Parts"?

"What's in a name?" It was Shakespeare who posed the question a few hundred years ago, but it's still applicable today. Especially when it comes to video games. How much research goes into the naming of a game? What were games called before they were given their permanent names? What if Freeway *had been called* Chicken Parts? *What if* Communist Mutants From Space *had been called* Communist Mutants from New Jersey? *And what if* Defender *had been called* Offender? *Would it have made a difference? You'll find the answers to these and other questions in the following story.*



By Ed Hulse

Living in a culture like ours, we're bombarded with brand names, product names and model names every day of our lives, and we place great value on identification of the goods we buy. In fact, when you stop to think about it, Americans have always been quick to come up with generic designations for their favorite products. Going back to your grandparents' time, for example, it wasn't uncommon to hear record players referred

to as "Victorolas" even though that title was only a model name for the phonographs manufactured by the Victor company.

A little later on, our parents took to identifying refrigerators as "Frigidaires," which was again, a model name for a product.

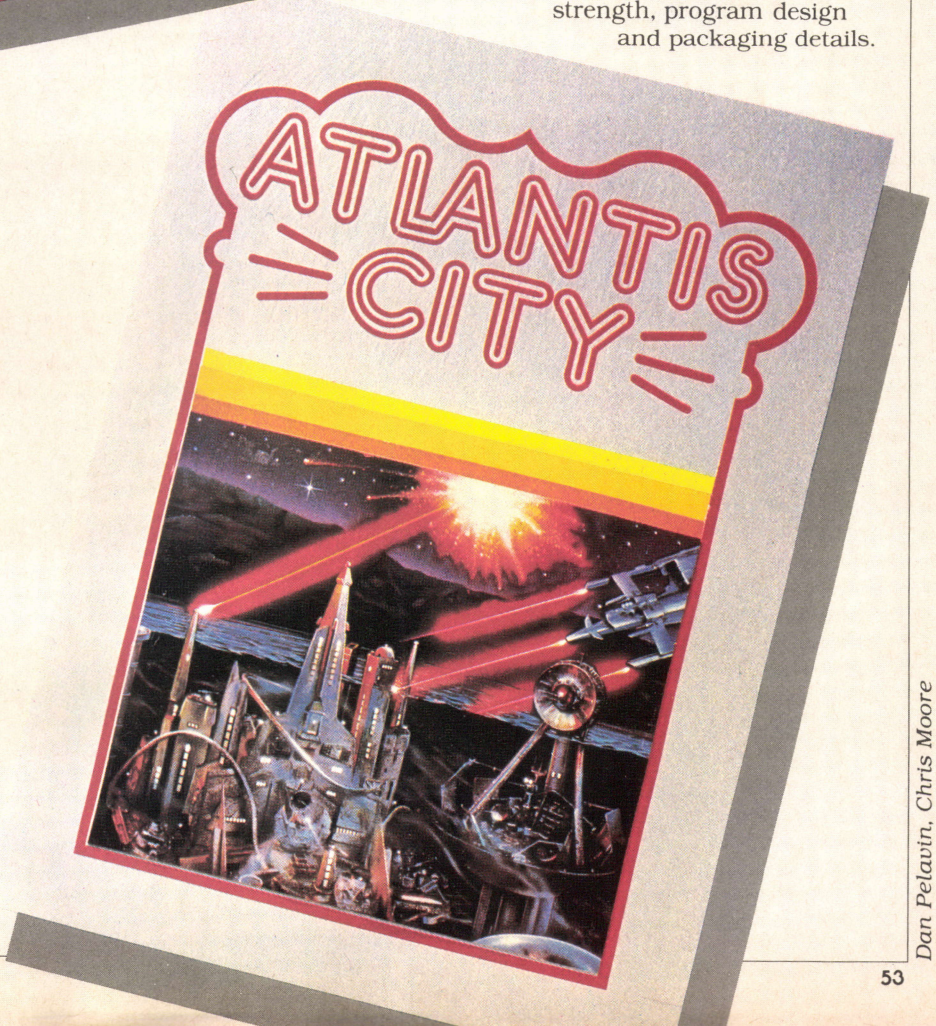
More recently, you can see this trend in those Brooke Shields commercials in which she calls her jeans "my Calvins." And while there are more than a dozen types of video cassette recorders, many people still refer to a VCR as a "Betamax."

So far, no one name has become synonymous with the video game industry, although certain titles have already passed into the language. (Most people have heard the name "*Pac-Man*" and know what a sensation the game is, even if they don't recognize the little yellow gobbler on sight.)

By the way, have you ever wondered why he's called "*Pac-Man*?" The game is based on a character from Japanese mythology with an insatiable appetite—and the Japanese word that we would pronounce as "pac" actually means "to eat." Small wonder our hungry little friend spends so much energy racing around the playfield!

Responsibility for coming up with a good name is divided several different ways. In many cases, the engineers and programmers who develop new games assign their own "working titles" to their creations, and a fair share of these are actually used for the final product. More often though, it's the sales, marketing and advertising groups which designate a game's title. When these factions work together, it's not unusual to produce a list of fifty or sixty titles *for each game!*

At this point, it becomes necessary to pare the list down to four possible names which are then run through the company's legal department to make sure they haven't already been copyrighted. The final decision is made with an eye toward advertising, marketing strength, program design and packaging details.



Dan Pelavin, Chris Moore

The bigger manufacturers sometimes augment this process with a certain amount of "field testing" which most often utilizes "focus groups."

One of the most successful focus group testings was responsible for the outlandish and phenomenally popular *Communist Mutants From Space* by Starpath.

Patterson & Glenn, which handles all the company's games, came up with over a hundred different names for the new Starpath creation. Some of them were *Clone Attack, Galactic Egg, Zombie Warriors, Space Sentinel* and *Mercenary From Mars*. But the one that they liked the most was *Communist Mutants From Space*.

The reactions were overwhelmingly favorable, even if most of the kids were unsure as to what a Communist mutant might be. One youngster, asked to define "mutant," explained that it was somebody who tried to take over somebody else's boat. And one nine-year-old explained that a Communist was "somebody who won't let you play with his toys."

Even computer software manufacturers have joined the ranks of game suppliers who feature products with wacky names. United Microware Industries (UMI), for example, has several new offerings: *Skibbereen* is a maze game which features a little character who does an Irish jig on the playfield; *Video Vermin*, which had several names before the company finally decided on that one, conjures up visions of disgusting little electronic creatures and *Spiders of Mars*, a goose-pimply release, which kept the title assigned by the programmer who developed the game.

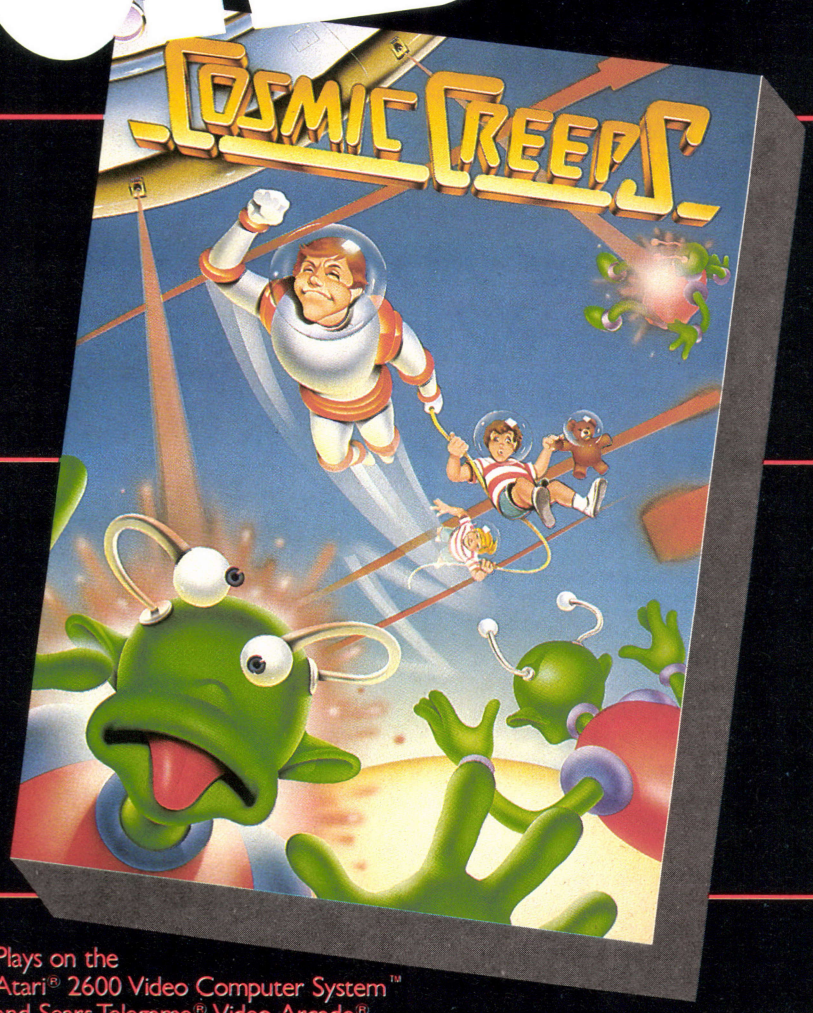
In some instances the acquisition of a name can prove to be a big boost for designers and engineers, as Dave Armstrong can testify. As a member of Dave Nutting Associates, he was involved with Astrocade's *Conan the Barbarian* game. Originally conceived as a sword-and-sorcery game to be titled *Quest for the Orb*, the game was just beginning to take shape when Armstrong learned that his organization had shared rights to the *Conan* title from Universal, who released the motion picture. His concept, already similar to the *Conan* movie, could easily be revamped to incorporate elements from the big-screen presentation. And the use of the already-recognizable title gave an added boost to the game.

Of course, you don't have to find a game based on a hit movie to have a game which evokes images from other forms of storytelling. Imagic's Dennis Koble illustrates: "Our *Atlantis* cartridge, which is very heavily into graphics, simulates an underwater city with various visual effects. Now, everybody knows what 'Atlantis' is—it's been in books, movies, songs—it creates a sense of mythology and conjures up so much imagery."

There are plenty of other titles which conjure up images we all know—like Activision's *Freeway* with its highway setting so familiar to millions of American drivers. Andrea Benjamin, speaking of the creative process used by her company in titling games, explains: "We don't have hard and fast rules, but our games have a lot of handles attached to them before we finally settle on one. For example, all games come from designer inspiration and our lab men have their own working titles. Our creative staff will come up with their own names in addition to working on the packaging. And sometimes we arrive with titles just by playing the finished games themselves."

But such industrious and efficient procedure is not implemented all the time. Sirius Software's Bob Beyn recalls that the name for *Twerps* was "the result of a large pitcher of Margaritas."□

ORB IT!



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Reader's tips

SPACE INVADERS

My friend taught me the 23/15 rule. To get 300 points for every mother ship, hit one on your 23rd shot and then every 15th shot after that. It's very hard, but any other way, you won't get 300 points.

Billy Clements
Los Angeles, CA

Q-BERT

Don't try to work on the top of the pyramid at the start. All the creatures pop out of there. Instead, go all the way down and cover the bottom cubes. Then, when Coily comes out, hop on a disc and let it take you to the top. Then finish off the top cubes.

Steve Brownstein
Richardson, TX

ADVENTURE

If you need some time to contemplate what to do and a dragon is pursuing you, move your marker so that it is pressing down on the top of a blockade or the bottom of a room. Then you can stop worrying about the dragon—he can't eat you unless you move up.

Jamie Lantry
Corapolis, PA

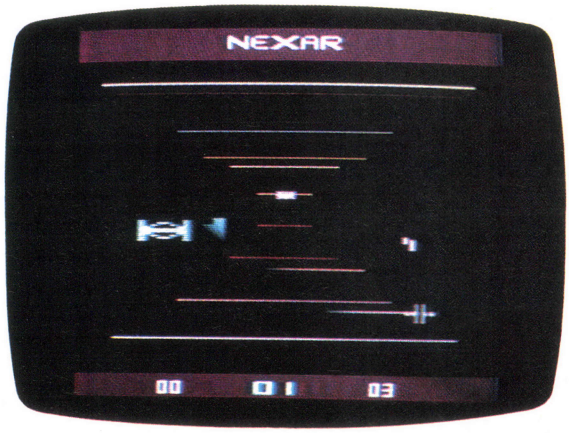
MISSILE COMMAND

This isn't a tip, but if you play level four and let all the bombs fall without bothering to protect yourself, the initials RF will appear on the bottom right-hand corner of the screen. You certainly won't get a very high score, though.

Bob Erdman
Havre, MT

NEXAR

Don't hit all the "boxes" right away. Keep in mind how many you have to hit in each wave and wait until you have less than 30 seconds left before hitting the last one. In the meantime, you can rack up more points while you avoid the boxes.



Ricky Denman
Portland, OR

BREAKOUT

Keep your paddle in the middle of the screen whenever possible. That way, you have the shortest distance to the ball whether it is hit to the left or right of you.

"Awesome" Smith
Ontario, Canada

CENTIPEDE

The only time you should stray all the way left or all the way right is just after the spider appears. If you hang out on one of the sides, the spiders leap out (and at such a short distance), it's impossible to avoid them.

Donna Slavin
New York, NY

DEFENDER

Landers never fire at their own height across the screen. Therefore, don't worry about fire from a lander flying at your own level.

Jim Daues
St. Louis, MO

TEMPEST

If you've exhausted your Superzapper and the Flippers are on the edge, you can still get them. Stay in one place and bounce your finger on the fire button as fast as you can. If you hit them just as they flip over you, they're dead. This is the one way to survive after your Superzapper is gone.

Mary Benjamin
Chicago, IL

NIGHT DRIVER

Focus your attention on the two pylons at the top of the screen. They help you know which way to turn.

Kevin Hall
Melbourne Beach, FL

Do you have a tip for your favorite game? If it's good, we'll print it in Reader's Tips. *Send tips to:* Electronic Fun, *250 E. 81st St., New York, NY 10028.*

GALAXIAN

Stay away from the corners. Once you get in there, they paint you into the corner with bullets and you're dead. At least in the center you can move left or right.

Bob Freeman
Laredo, TX

FROGGER

Don't be afraid of alligators. As long as you don't hop on their mouths, they'll let you go for a ride on them. Also, don't forget that you can go down as well as up in *Frogger*. A lot of people think you have to just move forward all the time.

Gerald Morales
Ware, MA

CENTIPEDE

Spiders never backtrack. When one of them pops out the side, go to that side, behind it. He can't touch you, but you can follow him across the screen and nail him any time.

Donald McHam
Long Branch, NJ

ROBOTRON

On the first two levels, don't just shoot blindly or you might pass through the wave without rescuing your family and earn valuable points. Always leave one Grunt running around while you help your family. After you've got them all, blow him away.

George Ponsi
Homer, LA

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Keep Stanley I. Presume hot-footing it as he dodges Coco's barrage of nuts in *Coco Nuts*. But *don't* laugh—this is serious business. It's a knock out!

And try *Cosmic Creeps*—a space game that's out of this world. It's up to you to save the Cosmic Kids from Skeeters, Creeps and oblivion. It's a blast!

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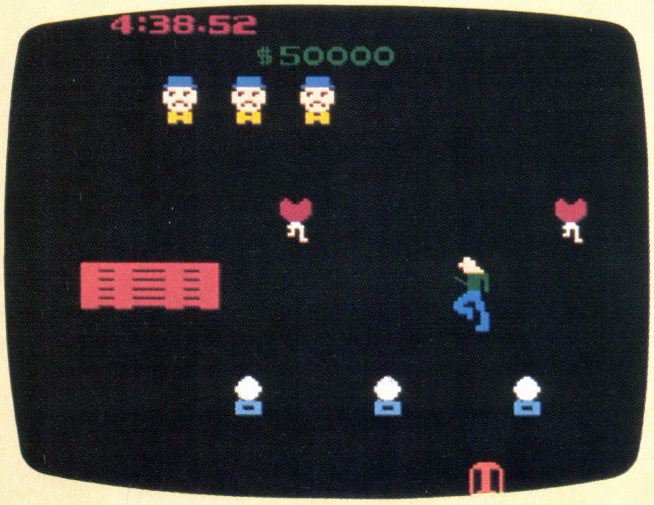


The first rock video game

JOURNEY ESCAPE ★★★

Data Age/Atari VCS

By Dan Gutman

First, we've got to look beyond the gimmick (a wonderful gimmick). The idea of a rock 'n' roll video game is painfully obvious. Considering that the audiences of video games and rock are nearly identical, it's amazing that nobody thought of combining the two before. But that shouldn't sway us into liking the game. Because once you get that cartridge home and into your VCS, you don't care if it says Journey or Springsteen or *Marie Osmond* on the box—you want a good, challenging game that you'll play for months.

Once you get past the strains of last year's Journey hit *Don't Stop Believing*, what you have is a vertical scrolling game in which you, a member of the band, must avoid various obstacles to reach an "escape vehicle." Presumably, you've just finished a wild concert and must get to your next gig fast. At the start, you've got $50,000, but every time you touch an obstacle—a "loved crazed" groupie, a photographer or a shifty-eyed promoter — you lose some money. To make matters worse, you only have "60 units of time" (50 seconds) to get each band member into the vehicle. Fortunately, you have help. Your loyal roadies, when touched, give you about three seconds of breathing room and if you're lucky enough to find your manager, you get $9,900 and a clear path to your vehicle.

In addition to the concept and the music, the game has a lot of nice touches. As the game begins, astronomy buffs will notice the Little Dipper along with Saturn and its moons. The screen displays the initials of the Journey member you are representing. The graphics, though simple, are elegant—the roadies look like little robots and the groupies resemble hot dogs with legs. The action is fast, but not *Kaboom!*-fast.

Rather, it is exacting—you have to make very quick, lateral movements, like a fullback sidestepping onrushing tacklers.

The game's problems lie not in the game, but in the scoring. Keeping score with money instead of meaningless points is a good idea, but since it's so easy to lose the money and so difficult to earn it, the final total is a poor measure of how well you played. You can play a poor game in which you don't even get one band member into the escape vehicle and wind up with $45,000, and then you can play a game in which you get four members into the escape vehicle—and wind up without a cent. Additionally, after you get that last Journey member into the escape vehicle, do you win the game? Do you make rock 'n' roll history? No, you just have to get the band into another escape vehicle in exactly the same way, ad infinitum. Oh, well. Such is life on the road with rock 'n' roll superstars.

The "fire" button gives you quick bursts of speed. Don't just use it when you need it—use it all the time for lateral movement.

SPIDERMAN ★★★

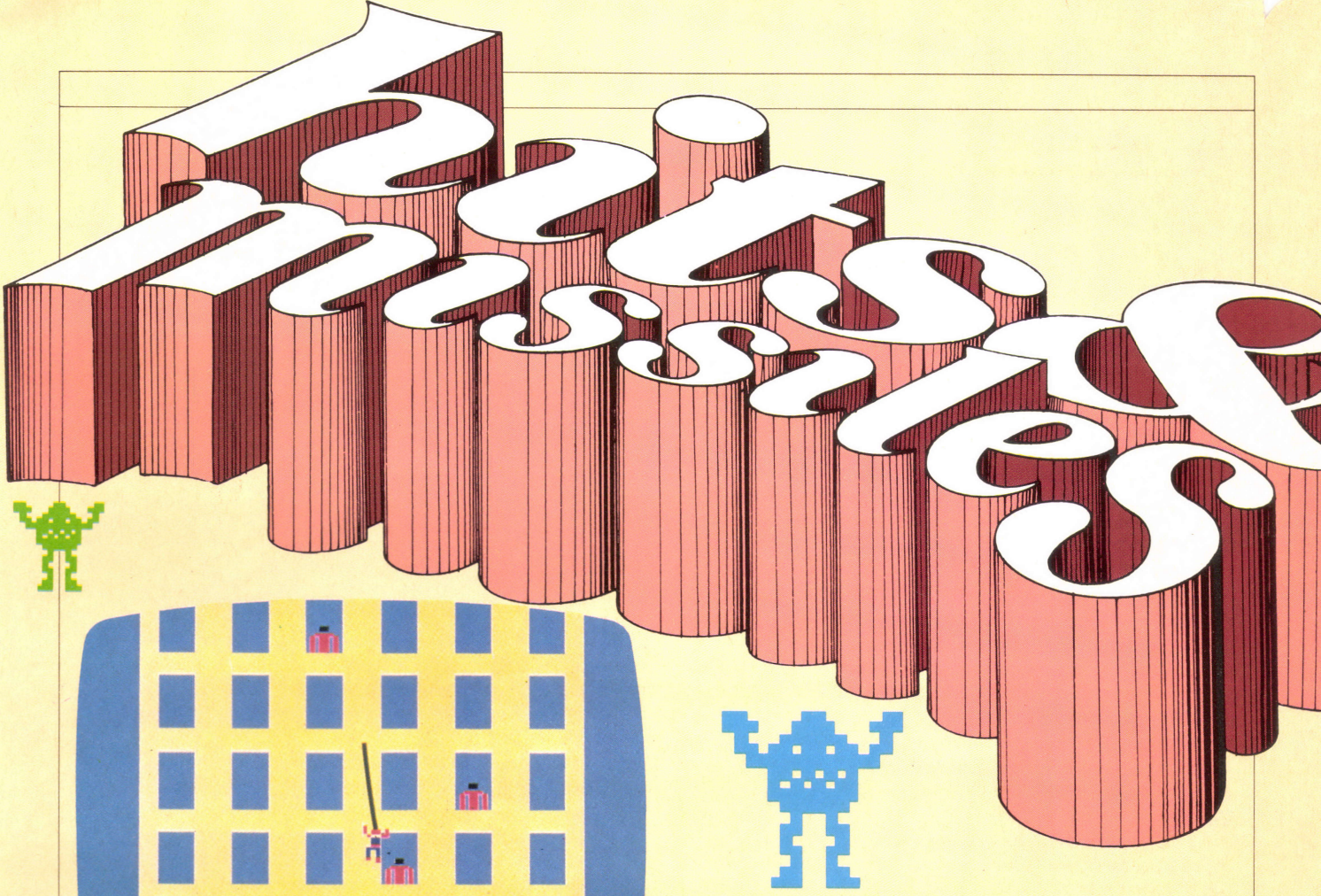
Parker Brothers/Atari VCS

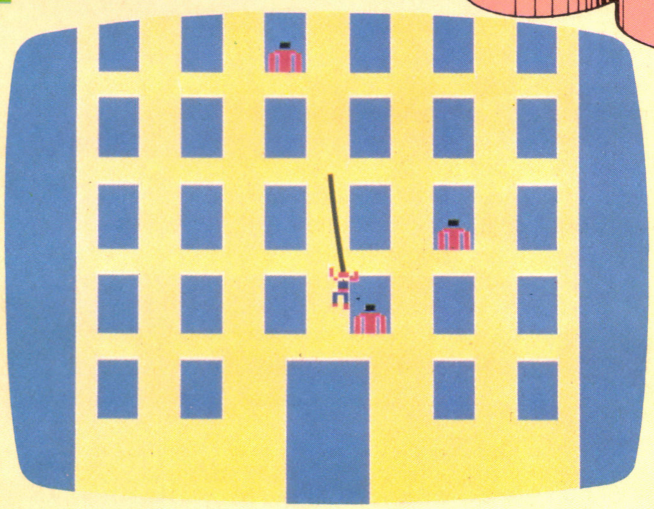
By Mark Trost

Spiderman may be the comics' original *Crazy Climber*, but he's a super-hero-come-lately to the video game screen. Parker Brothers VCS incarnation of Marvel Comics' famed wall-crawling character is certainly a challenging, graphically acceptable and ultimately engrossing game, but if video game plagiarism were a crime worthy of a super-hero's time, the object of this one would be to send Spiderman after the cartridge's designer.

The titular character is represented by a not unflattering collection of red and blue squares. His mission: climb up one of Gotham's highest skyscrapers and defuse deadly black time bombs (50 points), red time bombs (80 points) and a Super-Bomb (double the points scored on the last building and high voltage tower) planted by Spidey's arch-nemesis, the Green Goblin. While the Webbed Wonder doesn't have to avoid bird droppings or closing windows, as the arcade's Crazy Climber does, he must stay clear of (or capture) the Goblin's numerous henchpeople who pop out of windows ready to cut Spidey's web without hesitation. Spidey can avoid the criminals by moving around them or attempt to capture them one-by-one by crossing their paths.

Taking the character's traits into account, the *Crazy Climber* motif seems a proper, if somewhat stolen one





in which to set a super-hero whose main power is scaling walls. One nice variation on the theme is Spiderman's web shooting and swinging abilities. In order to move Spiderman up or down the building, you must shoot his web by pressing the fire button. The length of the web depends on how long you press the red button. If you want to move him to the right or left, you must aim the joystick diagonally, shoot your web and then swing from side to side. The computer animation during these swinging sequences is the nicest graphic element of the game.

While incorporating many nice aspects of the comic-book sensation, the game is, at times, needlessly violent. Every time Spiderman's web misses the building, crosses the path of the Green Goblin, a bomb or a henchman, the web is cut, sending Spiderman falling down the scrolling skyscraper to the street below. Unless you manage to shoot off a web and hit the building while falling (thus saving the hero), you graphically fall all the way down the screen, hitting the bottom with a bone-wrenching thud.

Take a lesson from the X-rated games and learn how to swing. Aim your web diagonally above the intended object (henchman, bomb, etc.) and begin swinging. Lengthen or shorten the web line until you've captured the item.

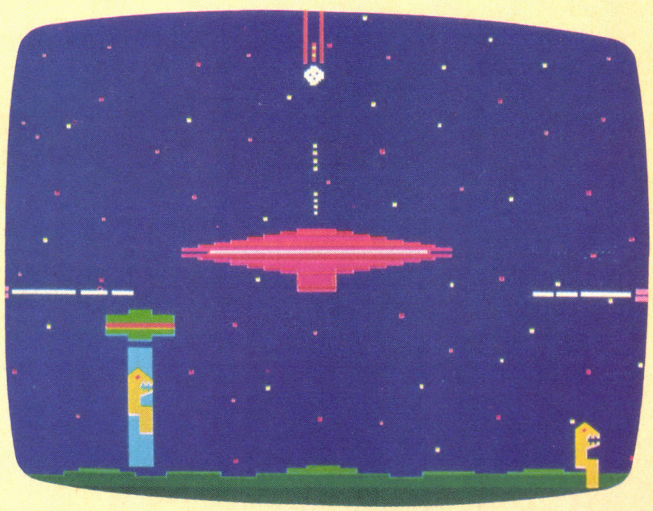
COSMIC ARK III

Imagic/Atari VCS

By Raymond Dimetrosky

Cosmic Ark is a game of speed so, to perform well you need lightning-quick reflexes. There are two scenes. In the first, your ship floats down from the top of a star-filled sky. As it hovers, you're bombarded by meteors from all sides. To destroy these meteors, you must fire at them by pushing your joystick in their direction. If you manage to hit them all before *you* are hit, you advance to the second scene.

You are now hovering over a planet populated by two speedy little creatures which look like bouncing number



eights. You send a little ship out from your mother ship to beam these creatures aboard. If you succeed in transporting them both into your ship before an alarm goes off, you're home free. If on the other hand, you fail to return to the mother ship within a few seconds of the alarm, you're stranded. The next time you advance to scene two, you're in for still another surprise. Now, as you try to suck the little devils into your ship, you're fired upon by gizmos that grow taller and are lcoated on the sides of the screen.

The graphics are excellent. The mother ship is very detailed and features a light running across it. The sky is filled with pulsating stars that sparkle and change color. When you press the red button to suck in the space creatures, the effect is magnificent. You can actually see the creatures slowly being transported into your small ship. But perhaps the best effect occurs when you have been defeated. The screen explodes in a mass of colors and your ship is seen flying away into the night.

Since so much of the game involves fast movement, there may be times when you become frustrated with the joystick's limitations. *Cosmic Ark* is one game that would benefit by using one of the deluxe joysticks available for the VCS.

It will be easier to transport the little space creatures into your ship if you trap them in a corner.

ADVANCED DUNGEONS AND DRAGONS ♪♪♪♪

Mattel/Intellivision

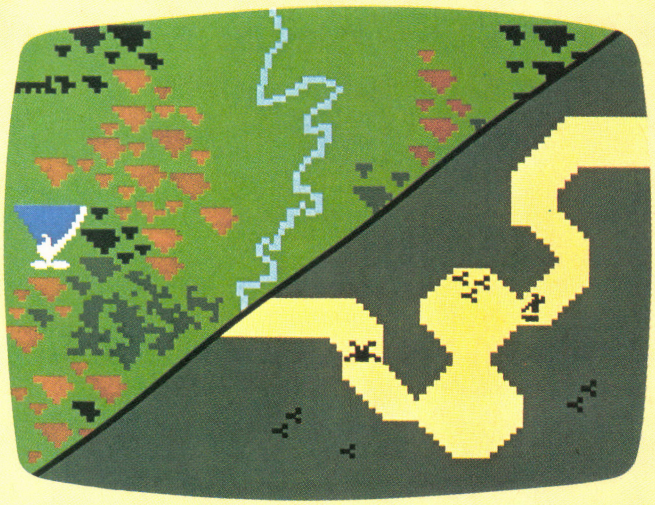
By Marc Berman

If you were the kid who cried at summer camp, *Advanced Dungeons and Dragons* is not for you. Not only are you divebombed by bats, but you're assaulted by scrawny rats, spiders, snakes, blobs, demons and dragons (both winged and earthbound varieties). Get inoculated before playing this game.

Based on the legendary TSR game, this one-player offering from Mattel pits a crew of three explorers against a landscape of terror. Your quest: recover the Crown of Kings hidden within the Cloudy Mountain.

But getting to the Cloudy Mountain is an accomplishment in itself. Your expedition must scale lesser mountains, cross raging rivers, hack through dense forests and penetrate battlement walls, using tools found along the way inside mountain labyrinths. The tools include axes, boats and keys and they all tend to be guarded by evil beasties. Sound complicated? It isn't really, because you, the explorer, control the pace, direction and difficulty of the expedition.

Judgment and planning are important here. Plan



your route at the outset—you may be able to avoid certain obstacles. You can also determine what kind of tools are hidden in which mountains. As you approach each range, the mountains change color, indicating what tool is inside.

Once inside, a timid explorer can creep along slowly or bolt into darkness in a blind panic. Besides creepy, slimy and scary things, quivers of arrows are hidden in the subterranean chambers. Pick up the arrows! They are your only defense against your rabid foes.

The graphics are terrific. The dragons look a lot like Godzilla. The demons dance around like Nijinsky in Hell. In fact, each creature has its own distinctive behavior and charm.

The only disappointment comes when you find yourself at last inside the Cloudy Mountain and in possession of the Crown. No munchkins come out and sing, nobody gives you a plaque or a research grant, nobody even says, "Thanks." The game just ends.

There are four difficulty levels. The harder ones have the monsters moving faster and provide you with fewer arrows per quiver. The accomplished player will learn to anticipate attacks by the sounds of approaching, unseen beasts or by tracks or bones (gulp) along the corridors. Hopefully the sequel will add an exterminator to the expedition party or at least provide the explorers with a can of Raid.

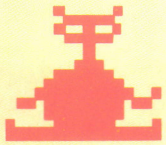
You can shoot around curves. Ricocheting arrows around corners gives you a distinct advantage over monsters.

VENTURE ♪♪♪♪

Coleco/ColecoVision

By Raymond Dimetrosky

For the most part, there are two types of home video games—those which are based on original concepts and those which are adaptations of arcade hits. To determine if the arcade translations are worthwhile, most people try to compare the home versions to their arcade cousins. A home version is considered good if it is faithful to the game which it was based upon. Well, Coleco has changed all that. Their games are so much



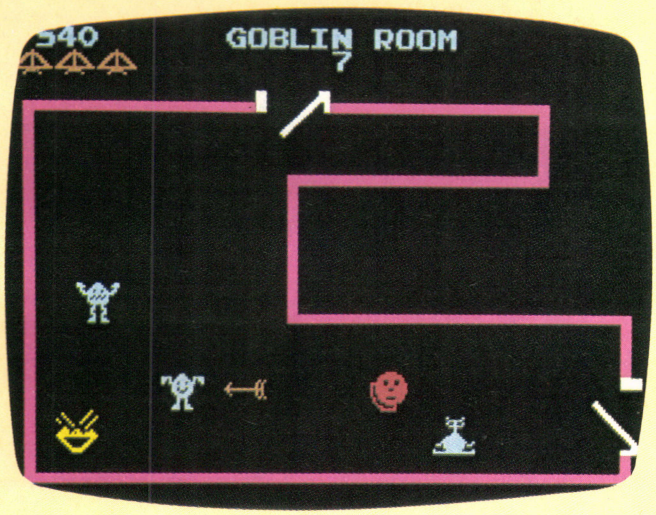
like the originals, it's pointless to make comparisons. You now have to ask, "Is this game fun enough to own?" In the case of *Venture*, the answer is yes.

The object is to enter various dungeon rooms and retrieve treasures. Each room has its own treasure—You can collect anything from a dancing ballerina to a treasure chest stuffed with jewels. Of course, it's not that simple. Each room also contains its own set of monsters. In your quest for the treasures you must fight off everything from slithering snakes in the serpent room to menacing devils in the demon room.

You are represented by Winky, a smiling round fellow who looks like a beach ball with an arrow running through him. To collect the treasures, your Winky has to shoot his arrows into the various monsters. Unfortunately, time is of the essence. If you take too long in a room, the evil hall monsters will enter and destroy you.

The graphics and sound effects are outstanding. When you enter a room you are immediately greeted by an eerie melody. Incredibly detailed monsters then begin to "dance" over to you in order to finish you off. The combination is sensational.

There are a few weaknesses in the game. One problem involves the ColecoVision controls, which at times do not seem to be very sensitive. This is particularly true when you move diagonally or when you need to move fast. Using the Atari joystick helped to alleviate the situation to some degree, but even with this, control was lacking. When you reach level four, you are in for another disappointment. After three completely unique levels, four is a repeat of one. The rest of the game continues to repeat the first three levels.



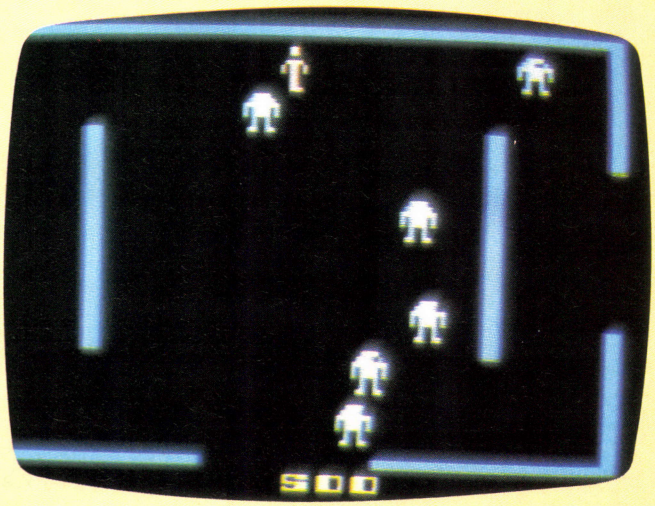
Never leave a room before you have taken the treasure. If you leave and later return, all monsters which you had killed will come back to life.

BERZERK ★★★★

Atari/Atari VCS

By Randi Hacker

With the possible exception of quarters and other coins, Atari seems to have a lot of trouble with round things. Take, for example, *Pac-Man*. He was a sorry



excuse for a dot. And Evil Otto, the insanely grinning face that bounces around in *Berzerk*, is no exception. He is translucent and has a tendency to flicker. But he's the only disappointment in this most recent Atari arcade-to-home conversion. The rest of the game is outstandingly loyal to the arcade game in both graphics and play.

As in the arcade version, you are trapped in a room with electric walls and a bunch of robots who are out to do you nothing but harm. At the first level, they can't shoot at you (thank goodness) but you can shoot at them. However, the further you progress, the more vicious the robots become and pretty soon (the second level, in fact) they, too, are armed. This, as much as anything else, is an excellent reason to support gun control.

Using the joystick, you make your humanoid run through the maze, avoiding contact with the robots, the walls, the bullets and Evil Otto who bounces in uninvited now and then.

To accumulate points, you shoot robots while dodging them and their gunfire. If they run into you, you fry. The more robots you destroy before you leave the room via one of the exits, the more points you get. If you wait long enough, however, most of the robots will walk into walls and destroy themselves. It doesn't matter whether you shoot them or they die by their own aimless wandering, you still get the points. This may seem somewhat unfair but it certainly is gratifying.

Each level's robots are more vicious than the last's,

though no smarter. No matter how heavily armed they are, they're still stupid enough to walk into walls and fry themselves. You'd think that after living in those rooms most of their lives, they'd learn. But no. And, as their aggressiveness changes, so does their color. First there's a rather white, semi-pacifistic, unarmed group. Then there's yellow, then an angry red, followed by a bilious green.

The humanoid is very responsive to your joystick input. And, as in the arcade game, he can only shoot in the direction in which he is moving. This means a lot of backing up and running forward toward the adversary you wish to destroy.

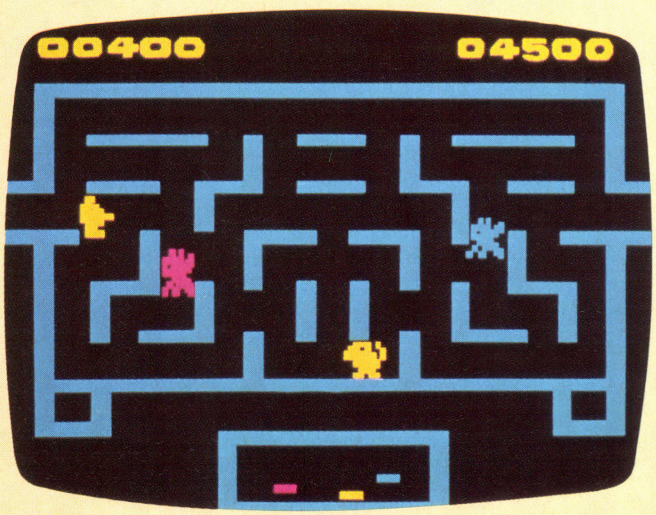
The changing mazes and the dodging and shooting all keep the interest level of this game very high, and there is a certain sadistic satisfaction in rubbing out each robot (accompanied by very gratifying sound effects) and avoiding his bullets which keeps you in a state of nervous anticipation throughout the game.

THE INCREDIBLE WIZARD ♪♪♪♪

Astrocade/Astrocade

By Michael Blanchet

The Incredible Wizard from Astrocade is the closest thing to arcade action I've come across in a long time. The action unfolds something like this: Assuming the



persona of a Worrior, the player's mission is to tread through as many dungeons as possible, blasting the bad guys with a weapon that is a heck of a lot easier to fire than pronounce (Concentrated Unified-field Disturbance Rifle). The opposition, in this case, includes Burwors (blue dragons), Garwors (yellow dragons), Thorwors (red dragons), The Worluk (a nasty looking butterfly) and the infamous Wizard himself.

The playfields change each time a complete wave of these "Worlings" is wiped out. Generally, as the game progresses, fewer and fewer partitions appear in the maze. Eventually, it's an open field. Worriors can no longer cower behind the walls. They must depend on their quick reflexes to cover themselves.

At the outset of each level, the Worrior enters the playfield from the lower left hand corner. Initally, he is confronted by a brood of Borwors, the least intelligent of the dungeon denizens. After vaporizing this lot, an ever-increasing number of Garwors and Thorwors appear. To simulate a real life situation, these guys remain invisible until they enter the same corridor the Worrior is standing in. Once these fiends are done in, the Worluk makes his entrance. He will scurry about the maze and eventually escape through one of the secret doors on either the east or west end of the screen. Hit him with your whatchamacallit gun, and point values in the next round double.

The Wizard is a little bit more unpredictable. He appears at random after the Worluk has either escaped or been blasted by that fancy gun the Worrior wields. Quick and fleet of foot, the Wizard can teleport himself *a la* Star Trek, anywhere on the playfield in a flash.

Players deft enough to wipe out the Wizard are rewarded with a barrage of special effects.

The Astrocade controllers make *The Incredible Wizard* a little tough to play. On more than one occasion, the joystick seemed to have a mind of it's own. I turned when I wanted to go straight or I went straight when a quick turn was needed.

The quirks of the controllers aside, *The Incredible Wizard* is a must have for all Astrocade owners. A tip of my hat to the designers—a home cartridge has finally done justice to an arcade game!

◄*Editor's note:* The Incredible Wizard *is the Astrocade version of* Wizard of Wor.►

After the Worluk has either escaped or been destroyed, test to see if your Worrior moves on command from the joystick. If he does, get ready. The Wizard is about to appear.

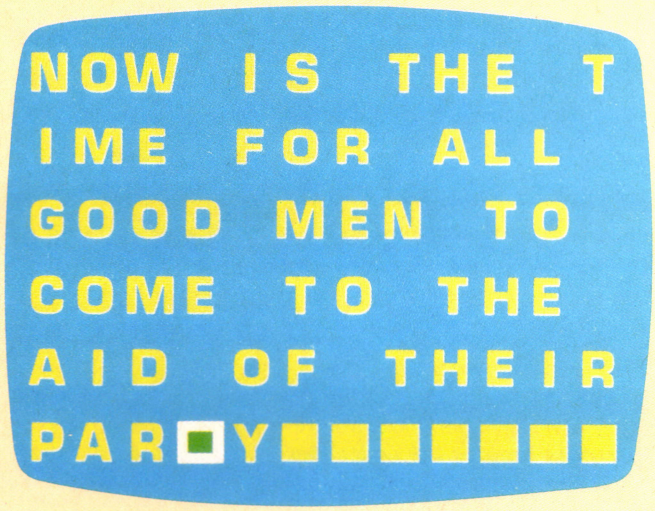
TYPE & TELL ♪♪♪

Odyssey/Odyssey²

By Art Levis

I've got it, it works (sort of), but now what do I do with it? That's essentially the problem with *Type & Tell*, the first cartridge designed for use with Odyssey's new voice synthesizer module. Of course, we can expect a lot more synthesized software—opening up a lot more possibilities—from Odyssey in the future, but with *Type & Tell*, you're pretty much limited to some simple introductory games.

Still, it's fun to amaze your friends and astound your



neighbors with a machine that talks back. The wizards at Odyssey have clearly done a remarkable job in giving their system a voice which can get its electronic tongue around the vagaries and inconsistencies of the English language.

But it has some odd quirks, and frequently drones away in a dialect pretty much alien to these parts. For example, *Type & Tell* flatly insists on pronouncing my cousin's last name, Straight, as "Stray-might." Yet it manages to get her first name, Elizabeth, right.

Here's how it all works: First you type in each letter of your message, which is then displayed in individual blocks within a larger matrix of 72 separate blocks. Then you simply press Enter, and the little computerized guy inside reads it back to you. (Wonder why they settled on a man's voice?)

Generally, with enough fooling around, you can come up with a close approximation of what you want *Type & Tell* to say. Here's one I tried, just to see if the little genius was napping inside there—Rhodabelle Beardsley Levis, my sister's name— I swear it's true. *Type & Tell* obviously didn't care for the name and mangled it the first time around. But, with the addition of a few letters—and the substitution of one vowel for another—it finally got it, though the voice seemed to be getting a little hoarse and gravelly toward the end. One other thing. Yes, kids, it *can* talk dirty.

PLANET PATROL ★★★★

Spectravision/Atari VCS

By Frank Lovece

The Chevy Impala isn't called the Chevy Armadillo for good reason. "Armadillo," you might say, lacks that certain drive. Same with the name *Planet Patrol*, which, coupled with a package description that rightly places the accompanying game in the *Defender* school of spacejet-versus-oncoming-missiles, leaves you expecting something as scintillating as *Plan Nine from Outer Space.*

The name game, it turns out, has little to do with the video game, which is outstanding. Despite the limitations of the Atari VCS, *Planet Patrol* has exceptional graphics and the mark of a designer who must've devoured Frank Herbert's *Dune* trilogy in one sitting.

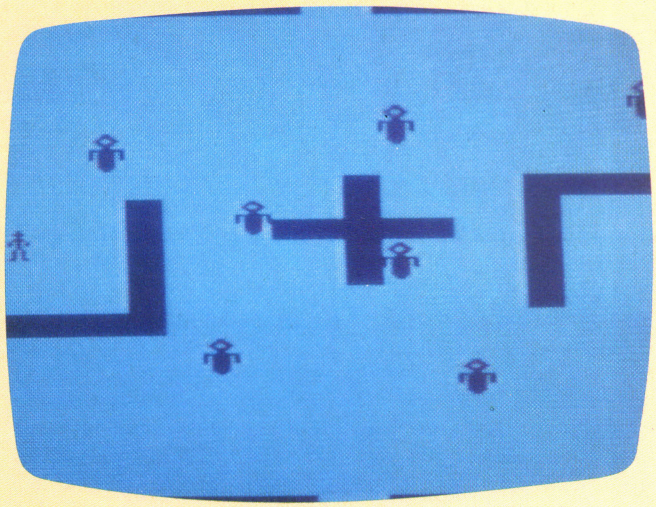
There is dawn, there is dusk and there is *pacing.* After your fighter gets through a daylight wave of drone missiles and indestructible heat-seeking torpedoes, then demolishes a trio of enemy bases and dodges the resultant debris, evening falls and the enemy becomes harder to see. By nightfall, the attackers are invisible save for those moments when your spacejet fires.

As with a number of new home video games, this one requires you to watch a fuel gauge. Your spacejet can take one pit stop per day, requiring little more than an easily maneuvered landing. The trick is the stage before that: making it through enemy-base debris which scatters in different, seemingly random patterns each time, making a surefire evasive strategy virtually impossible.

The instruction book is a riot, and a harbinger, in all likelihood, of instruction books to come. Spectravision's talking *Mission: Impossible* seriousness here, with the booklet turned into a notice that all leaves have been cancelled and that you're to return immediately to your star base and then take off for the planet "Spectra."

Thankfully, the game action lives up to its grandiose instructions. Even if the graphics weren't as good as they are, the varieties of attackers, obstacles and objectives create welcome diversity. The point values change as you progress through five screen days—10 through 50 points each for downed drones, 100 to 500 each for rescued pilots, 200 to 1000 each for decimated enemy-base clusters—and stay at the maximum as long as your spacejet (four per game) remains intact.

As far as strategy goes, don't worry about wiping out too many of the first-wave missiles—just get through them alive and move on to more point-profitable waves. Night flying is troublesome, but just keep firing and maneuvering. Stay away from the top or bottom of the screen during this phase or else you can get boxed in by just two heat-seeking torpedoes.



AMOK ♪♪♪

United Microware/Commodore VIC-20

By Walter Salm

This game is closely related to *Berzerk* although there's no Evil Otto to plague you, just a lot of very dumb robots who gladly shoot each other in their efforts to get at you. Like *Berzerk*, there are varying simple maze walls to get around, and they'll kill you if you run into them.

Unlike *Berzerk*, there are just three possible exits. Actually there are four—two at the sides and two at the top and bottom of the screen. But one of them is always plugged by a barrier and this barrier moves to block off a different exit with each new board of the game.

I found it easier to control my man and his gun than with the Atari VCS *Berzerk*. I suppose this is an example of what Commodore means by a "friendly computer." As with many VIC games, you can play using either the keyboard or a joystick.

There are nine skill levels, which you can select with function key "F1." You earn points depending on the color of the robots you destroy: green robots—5 points; blue—10; red—15; black—35. You also get bonus points after clearing all four rooms in the space station AMOK. For every 1500 points, you earn an extra man in reserve, added to the three you start with.

This is a neat game and the graphics are quite good. You end up almost feeling sorry for those klutzy robots—that is, until one of them zaps you. Load the tape and enjoy.

AIR STRIKE ♪♪♪

English Software/Atari 400/800

By Walter Salm

If you're looking for a good home version of *Scramble*, this is one of the best I've seen yet. It's fast-moving, the graphics and sound effects are good and it's hard as the devil to play—even at the easiest skill level.

This game is loaded from a cassette or disk. (You do not need the Atari BASIC cartridge to play.) The cassette version takes a good five minutes to load into the computer. But once it's in there, you're in for an evening of really top notch game play and cursing. As I said, it's awfully hard.

The one problem—and this is really a problem with the hardware—is the fact that the joystick has only one fire button. You need two for this game. So you fire the ship's laser cannon with the fire button and drop bombs by tapping the space bar.

The game is set up for one or two players. You get three attack ships and the enemy has ground/air missiles, exploding fission bombs, airlock doors and natural obstructions to block your way. There are also meteor showers to get through, and your own limited fuel and armament. You get more fuel (and points) by destroying a fuel dump; you get more ammunition (and points) by destroying an ammo depot. This is an excellent game, but suffers from being too difficult for beginners.

Don't try to go in too fast at first. Pull back on your ship so you can zap those surface-to-air missiles.

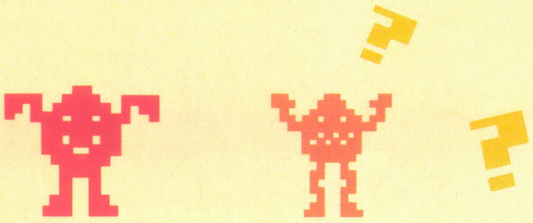
COSMIC FIGHTER ♪♪♪♪

Big Five Software/TRS-80

By David Thomas

Beginning with a stunning display of graphics combined with impressive sound effects, *Cosmic Fighter* is a well-documented, stimulating and challenging TRS-80 game. It is easy to understand but not to master.

The game is for one or two players. You, the player, control a ship at the bottom of the screen which can be moved left and right using the arrow keys. Four different waves of aliens drift downward, firing missiles at



you. You must do your best to dodge the missiles and shoot all the aliens before one of them makes it to the bottom of the screen. If one does, your ship is moved up which puts you at a definite disadvantage. Then, in this vulnerable state, you are attacked by another wave of aliens.

At any time, a deadly flagship may appear. These shoot powerful blasts at your ship and they never miss. You can survive only five blasts so your primary goal is to destroy flagships promptly.

If you successfully defeat four waves of aliens, a fuel station ship and a flagship will emerge. After destroying the relatively small flagship without shooting the huge fuel station ship (be careful . . .), you are permitted to dock and refuel. (Actually, you have to dock whether you need the fuel or not.)

After docking, the next four waves of aliens—including flagships—require two hits each before they succumb. Once you become accustomed to the game, this is not hard to manage. Four waves and one more docking later, the aliens require three hits each. This is where you begin to worry. The next time, it takes four hits. It's not as hard as it seems though, because your ship can shoot rapidly at this level and some shots are "double" shots which are less likely to miss.

You begin with three ships and are awarded an extra ship every 10,000 points. The game keeps track of the best scores on a board printed when the game is not being played.

Aside from having superior graphics and sound, this program has another feature. If left unattended, the game will play itself and, you know, it's not bad. I've seen it score as high as 10,000 points.

The second wave is the hardest, so fire generously and conserve your fire power in the other three waves.

KID GRID ♪♪♪♪

Tronix/Atari 400/800

By Shisha van Horn

Running around a grid, coloring squares and avoiding monsters that resemble telephones, hearts, lawnmowers and smiling hexagons may sound like kid stuff, but it isn't. *Kid Grid*, a game similar to the arcade game *Amidar* (but by no means easier), is one of those games that makes you think you can beat the system if you play it just one more time . . .

In *Kid Grid*, you travel around a grid, trying to cover it completely. In order to do this, you move along the lines, coloring them as you go. As you complete the perimeter of each square, the square gets filled in with color. Once you've colored all the squares, you move to the next board: another grid where you must do exactly the same thing, only faster.

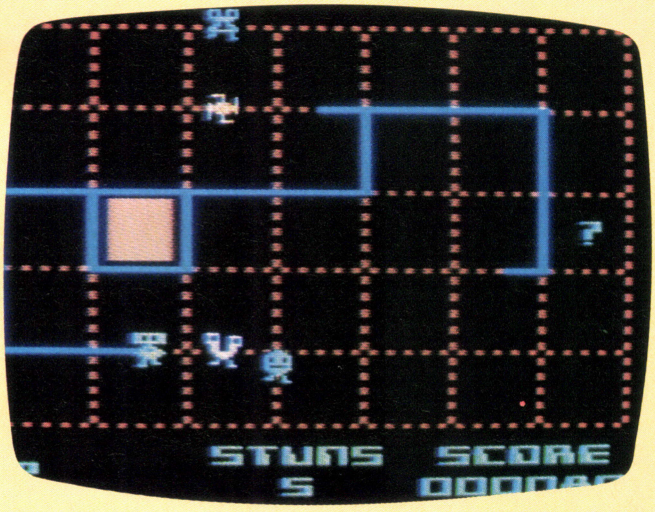
Achieving the above would, in itself, be no problem, except for those four creatures intent upon killing you. These monsters wander around the grid looking for trouble and testing your nerves. You cannot kill them, but they can kill you. Your only weapons against these beasts are your "stuns." A stun stops all of the beasts, rendering them, for the moment, harmless. Beware. When you stun them, you can run over them, but that doesn't earn you any points—it just makes you feel good.

The fact that the monsters have a certain hi-res beauty doesn't help at all. No matter how attractive you may find them (I became particularly attached to the lawnmower and heart as they followed me around), there seems to be no set pattern to their movements and they don't always react the same way to yours.

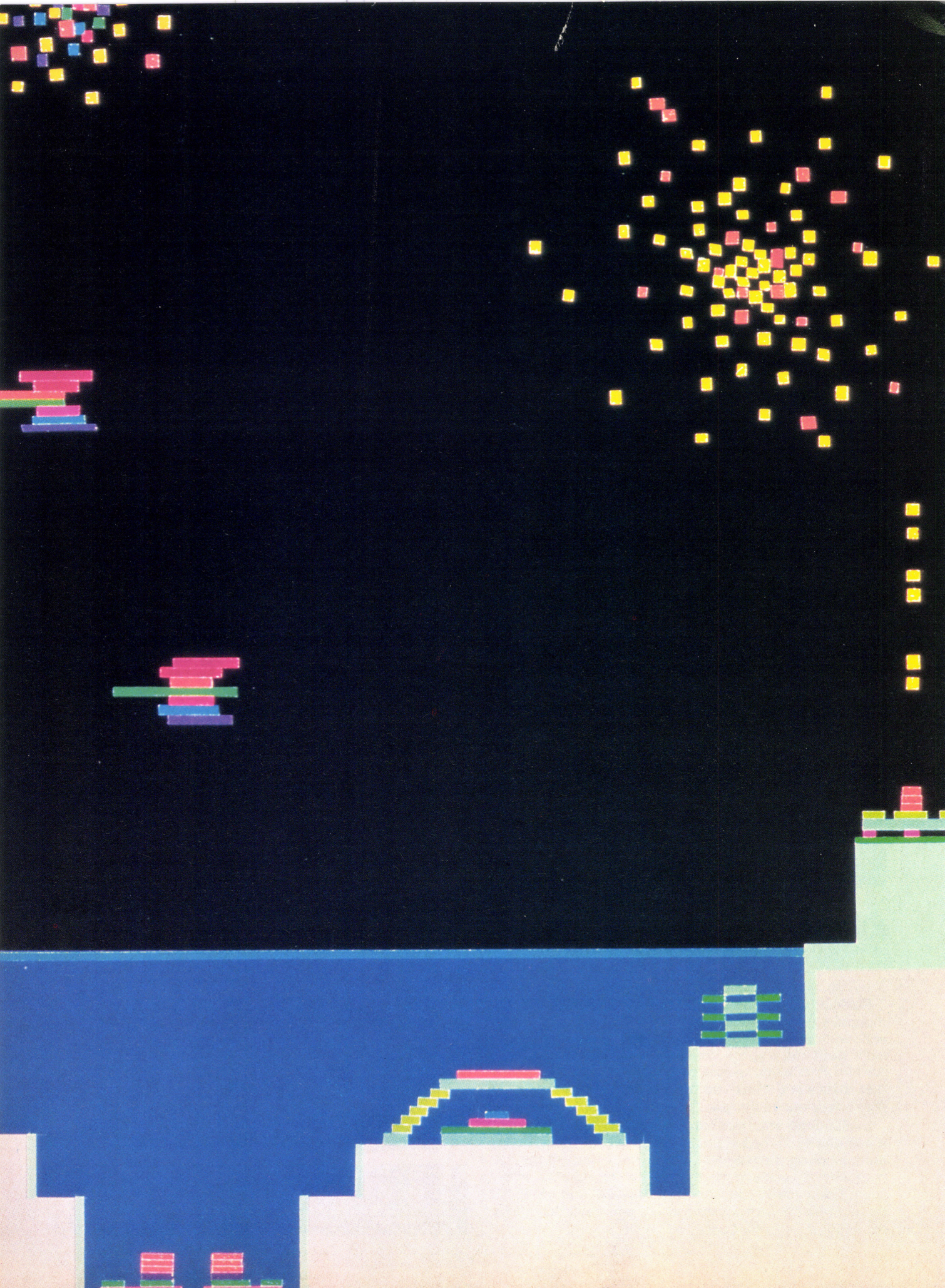
You score 100 points for each square you fill in on the first grid, 200 on the second and so on. If you fill in one with a question mark in it, you get bonus points—but not enough to make it worthwhile. Save time and energy by filling in two squares at once.

Kid Grid has 15 different playing levels to satisfy everybody from the novice to the expert gamer. You have a choice of five difficulty settings which vary the speed of the game and you can choose between three, five and seven stuns. Even on the slowest setting with the most stuns, the game is quick enough to challenge almost anyone.

For *Amidar* buffs, this is the home equivalent with three differences: The grid is square, not irregular, which makes it harder to anticipate the enemies' moves; there is no bonus round (or bonus points for finishing a grid) and the monsters are more intent on killing you and less intent on having a good time.



Protect your men at all costs—you get more stuns at each new level, but not more men. Use long, straight paths wherever you can.



ATLANTIS
Game of the month

The submerged city of Atlantis battles an unrelenting enemy assault and struggles to survive. Knock out the flagship and pulverize the fleet!

A CONTINUING SERIES

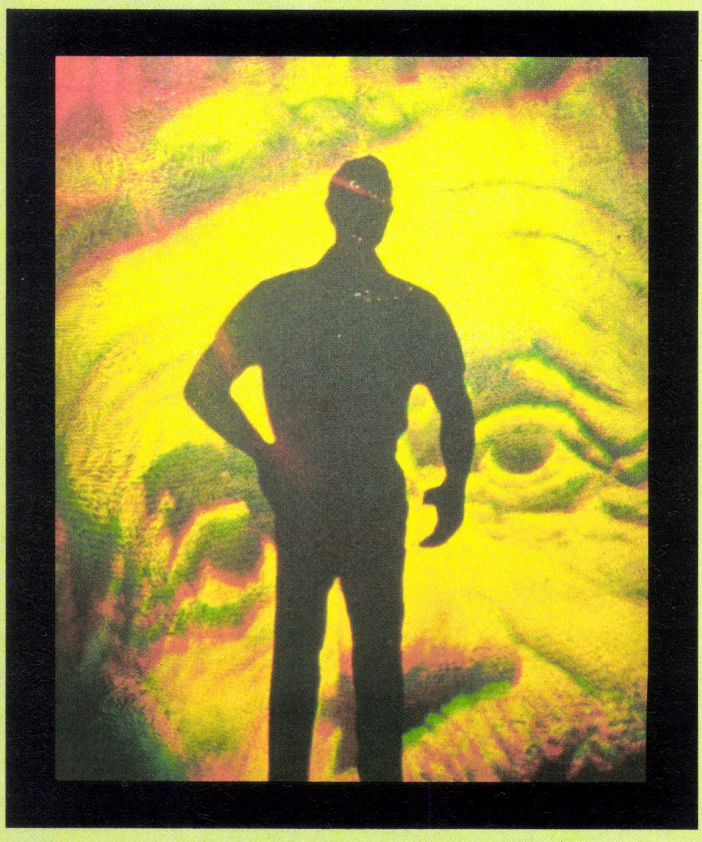
FUTURE FANTASY FUTURE FACT

Holography

By Josh Martin

The woman against the museum wall was looking at me. When I moved, so did she. And then, with a devilish wink, she blew a kiss! What made the woman's actions extraordinary is that she wasn't real. She was a 3-D image in plastic —a hologram. To be more precise, she was the star of the holographic "movie" called *Kiss II*.

Kiss II is one of about two dozen holographic "movies" that can be found at the Museum of Holography in New York. Starring celebrities like Big Bird, William F. Buckley Jr., Andy Warhol and Arthur Ashe, these "movies" showcase the remarkable 3-D qualities of holography. But, holography is more than just an amusing image-making device. Since the museum opened its doors seven years ago, the technology has entered a key development phase that is just beginning to bear fruit.



Although several game manufacturers (Atari, Coleco, Mattel and Walt Disney among them) have invested in holographic patents and research, few have introduced any. There are no games currently on the market. Games like Sega's *Subroc-3D* use complex optics to create the imagery. Coleco and Atari are working on holographic games, but chances are you won't see one for awhile. Game companies are not sure the public is ready for holographic games yet.

If you're intent on seeing holographic games of the future now, there are a few games in existence. One such game is *Gunsmoke*. Built for and displayed in the Museum of Holography, it costs two bits to take a shot and a score of 38 will win you a free game. No sweat for

gamers used to rolling a game!

In *Gunsmoke*, you are armed with a rifle and try to out-draw a wild West gunslinger who stands inside the swinging doors of a saloon. If you win the draw, the 3-D gunslinger falls into the dust; if you lose, he stands triumphant with his six-shooter still smoking. What is remarkable, technically speaking, is that both alternatives are contained in the 3-D action of the hologram. Sophisticated video game players might find the action primitive, but the holographic movie action is impressive.

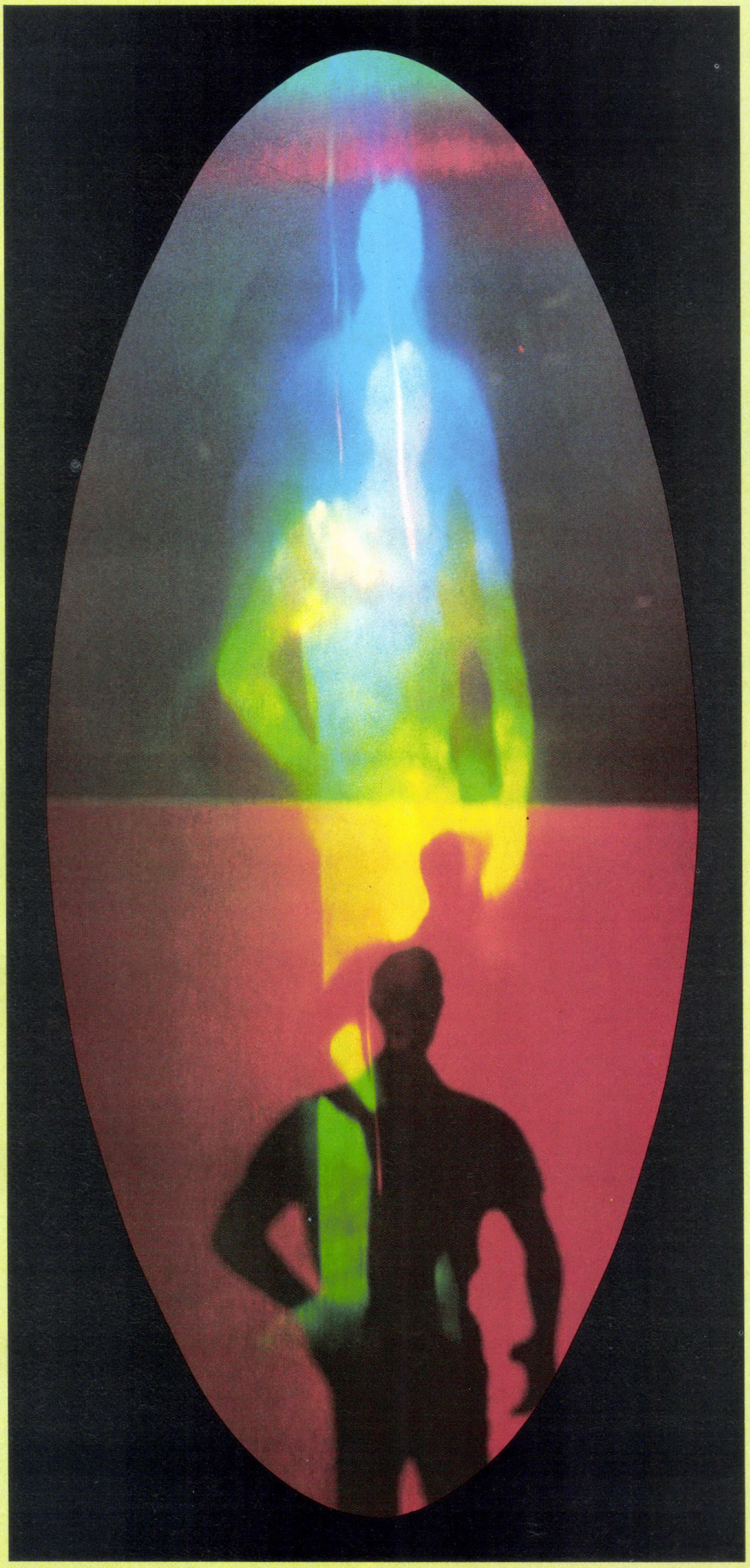
Kansai Saiki Seisasukusho Corp. (Kasco), the Japanese company that makes *Gunsmoke*, has sold over 6,000 of them, but there are only 750 in the United States. Kasco also markets two other holographic games, *Samurai* and *Bank Robber*. And naturally, the first X-rated holographic game has already been developed. It was built by Peter Claudius.

Secretive

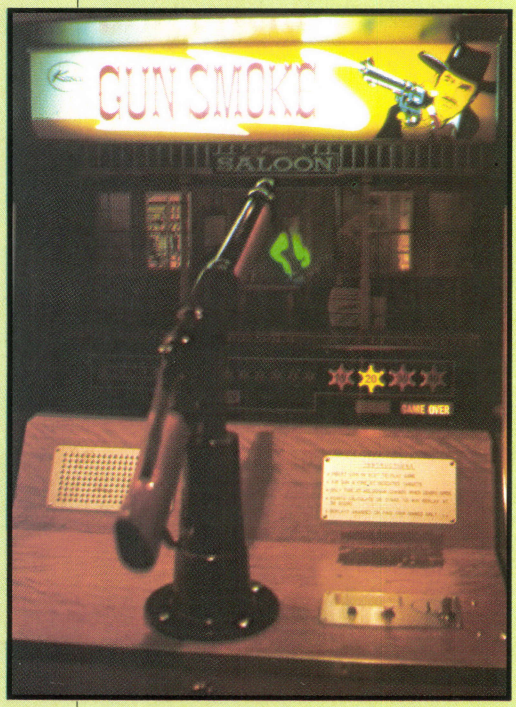
Until the late 1960s, it was assumed that you had to have millions of dollars to make a hologram. Then, an ex-research scientist named Lloyd Cross discovered that holograms could be made on a shoestring budget and could be as good—or better—than those made in large government labs. Working with a team of artists and using only scrap materials, Cross built a lab which he says is superior to others costing several times as much.

Most companies and individuals now working on holography are secretive about their work. And many video game manufacturers feel the idea hasn't matured enough for public acceptance. They realize, however, that the potential of the technology is enormous and that those who are able to develop the right applications and hold the necessary patents stand to make a fortune.

One of the few people in this area willing to talk about developments is Eugene Dolgoff, whose Long Island-based company, Dolgoff Holophase Inc. (DHI), has been



Holography is a form of laser technology. The word comes from the Greek "holos" and "gram" meaning "whole message."



One of the first holographic games, GUNSMOKE, pits you against a 3-D gunslinger complete with smoking six-shooter.

working with holography for the past 10 years. Dolgoff is somewhat amused by all the secrecy: "Everybody thinks they have something but almost no one has anything. You can spend a lot of money and not get anywhere."

DHI has a development program which aims at incorporating holography into a number of existing products including games. The company has already produced holographic business cards, stick-on holograms (for stationery or decal use) and novelties. It is about to enter the game field with a holographic jigsaw puzzle which is slated to hit the market in mid-1983. What makes the puzzle unique, says Dolgoff, is that two people can be sitting at the same table, viewing the same puzzle pieces, yet be working at assembling two separate images. Dolgoff expects non-electronic holographic video games to be available as early as 1984.

What exactly is holography? Well, the technology whose name comes from the Greek words *holos* and *gram* meaning "whole message," is a technique using lasers to create 3-D images. According to the *Holography Handbook* (Ross Books, Berkeley CA), a hologram is "an interference pattern formed as a result of reference light encountering light scattered by an object and stored as such on a light sensitive emulsion." That's not too clear. The Museum of Holography offers another definition: "Holography represents the space in front of and behind the plane of traditional visual recording. It is the cube rather than the square."

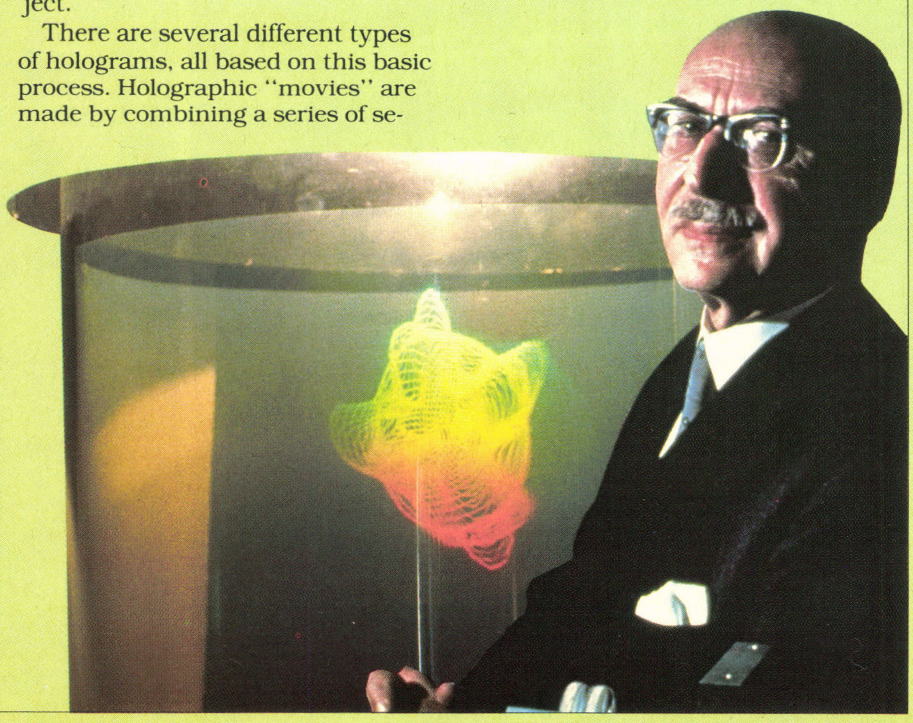
Holograms are created by optically splitting a laser beam into two rays. The object beam illuminates an object, while the reference beam illuminates a film plate onto which the hologram will be recorded. When the object beam reflects from the object to the film plate, an interference pattern is formed by colliding light waves. (During the process of making a hologram, the objects appear grainy when bombarded by the laser light. This creates the illusion that the object is only an image.) When the interference pattern captured on film is illuminated, this pattern reconstructs a 3-D image of the object.

There are several different types of holograms, all based on this basic process. Holographic "movies" are made by combining a series of sequential holograms. Most contain between 360 and 800 successive movie frames, covering 7 to 15 seconds of real time action. Reflection holograms are illuminated and viewed from the front of the holographic plate (unlike the "movies," which need a special wall mount and lighting arrangement). The most recent type of display is printed holograms, which are stamped onto a mylar surface. Printing allows for mass production.

Holographic Problems

According to Edward Bush, editor of the museum's magazine, *Holosphere*, the main problem with efforts to bring out a holographic video game is that holography is "not compatible with other imaging technologies." He explains: "It would take 256 days to transmit a hologram on standard television bands. Television is 525 lines to the inch, whereas a holographic image is 10,000 lines to the inch." This, of course, would make the development of a holographic cartridge for a standard TV hook-up videogame system—such as the Atari—a very difficult and perhaps unfeasible process.

Nevertheless, holography, television and photography are linked, if



only because all of them are visual technologies. The differences that have blocked the combination of these technologies are rooted in history. Photography was developed and used as an alternative to painting. In a flash, light passes through a lens to leave an entire image simultaneously on film. Television was developed as a means to transmit visual information by breaking the image into segments and transmitting the segments to a receiver for reassembly. And holography?

In the creation process, holography is similar to photography, and many people in the field compare their work to that of the pioneering photographers. Indeed, it has been said that those photographic pioneers had enough technology on hand to develop holography 80 years ago. But they

Left, Dr. Dennis Gabor, who conceived of and produced the first hologram. Gabor invented holography in 1948 and won the Nobel prize in 1971.

Holograms For Sale

Holograms are priced to fit every budget—from under $20 to over $2,000. You can purchase a work of fine art for $1,000, or you can select from a variety of subjects and objects (people, plants, pins and belt buckles) ranging in price from $12.50 to $135. Custom jewelers offer gold or silver holograms at prices ranging from $125 to $800. And if you want to really make your wedding day memorable, purchase a holographic portrait of the event for $2,500.

Both the Museum of Holography and Hammacher-Schlemmer, the eccentric New York City-based department store, offer holographic "movies." One of the best known "movies", KISS II, features a young woman blowing a kiss; as you move around the image, mounted between two sheets of clear plexiglass curved 120° in front of a black metal frame, she gives you a kiss and a playful wink.

While many department stores and jewelry shops carry some holographic items, two of the best places to shop are:

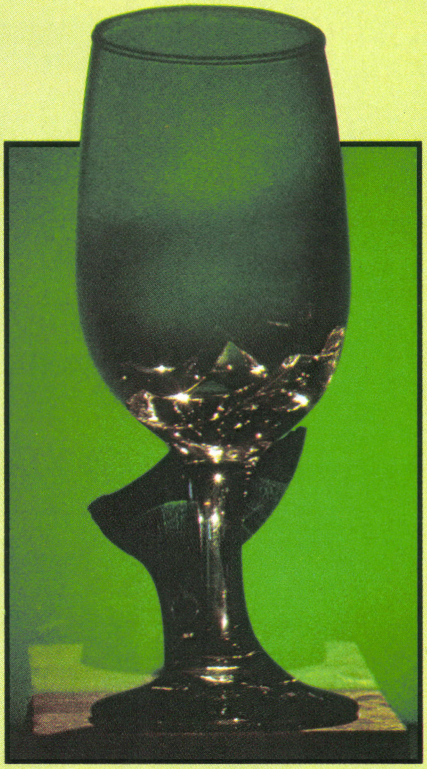
The Museum of Holography
11 Mercer Street
New York, NY 10013
(212) 925-0526

Holos Gallery
1792 Haight Street
San Francisco, CA 94117
(415) 668-4656

didn't.

Holography was originally developed as a way to improve magnification images of the electron microscope. The first holograms were produced in 1947 by Dr. Dennis Gabor, a researcher at the Imperial College in London, England. They were crude images produced using X-rays and other short wave forms of light and completely lacked the three-dimensional qualities we are now familiar with.

The problem was the light waves, which are the key to holography. The better the light, the more accurate the image created by light waves bouncing off an object. With the invention of the laser in 1960, holography took a quantum leap forward. Lasers produce a very pure, uniform light source and scientists like Y.N. Denisyuk in the Soviet Union and Emmett Leith in the U.S. were able to apply laser technology and new optical techniques to produce 3-D holograms.



The bottom of the glass is real. The top is a hologram. You can put your finger right through it. This is on display at the Museum of Holography.

State-of-the-Art

Because of the potential health hazards of high-powered lasers, it was difficult to let the public in on these developments. But with the creation of white light holograms—holograms which could be displayed with ordinary room lights—holography could be safely exhibited.

In 1976, the Museum of Holography opened its doors in New York City, providing educational information and displaying state-of-the-art holography as well as a number of historic exhibits. Its 800-work collection includes Dr. Gabor's first hologram, the first color hologram, and the first laser hologram.

It is hard to say where holography will go from here. Recent developments may lead to new uses such as the mass production of holograms on vinyl, improving and controlling the colors in the images and the development of black-and-white holographic images. (A traditional holographic image doesn't come out black-and-white because, not unlike a prism, it focuses all colors, creating a blur.) Another advance is the production of a colorless hologram—that is, a hologram that does not have the color of the laser—red or green or whatever—included in the image. The colorless hologram is seen as a significant step toward the goal of an accurate, full-color 3-D image.

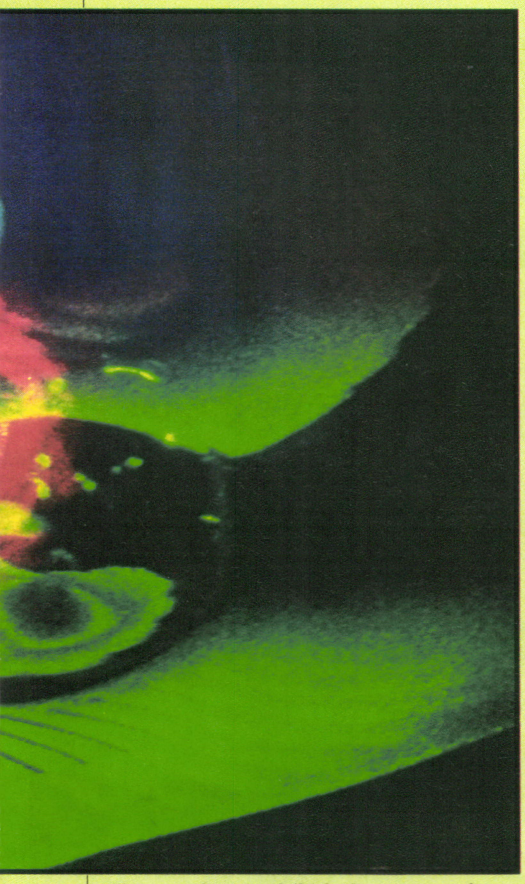
Soon we'll see a number of holographic forms of entertainment, games and novelties on the market. But practical applications are in their infancy.

Mass production and color control could lead to the introduction of some curious consumer items, like holographic wallpaper, mobiles and even wall tiles. Polaroid has been refining and clarifying holograms for people to hang in their homes, like family portraits.

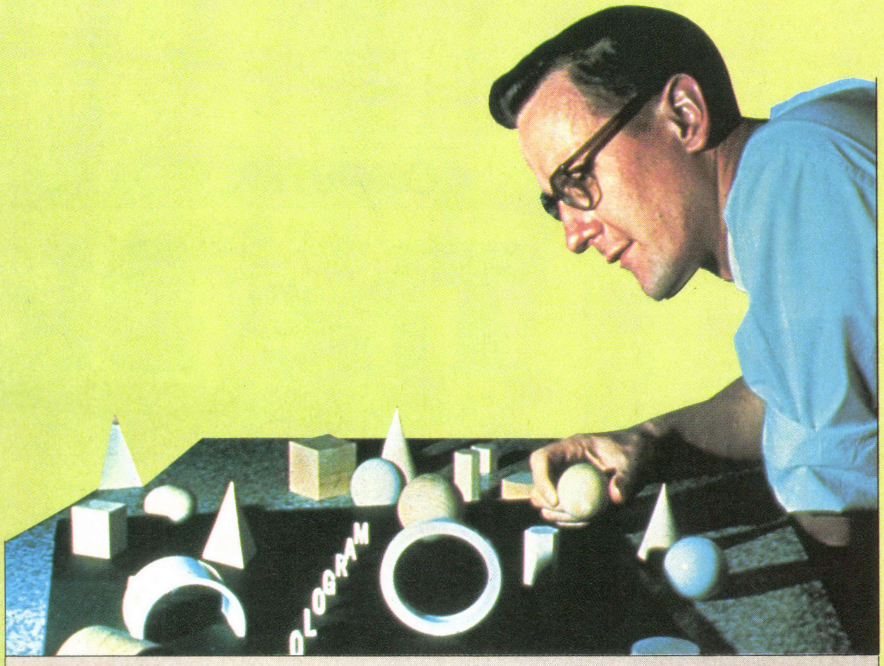
High Fashion

There have even been signs of a fashion trend for holographic jewelry (see sidebar), according to *The Wall Street Journal*. The Museum of Holography has sold over $200,000 worth of holographic items. One company, Light Impressions, produced 250,000 holograms last year.

Most people agree that the boom hasn't occurred yet. As one holographer put it, "It isn't going to make the Fortune 500 list this year." However, holography *is* ready for widespread consumer production and the technology is such that almost anybody can get involved. The industry just needs people with open minds and pioneer spirits to get the "whole message" across to the public. Will video game manufacturers be among them?□



These otherworldly holograms only hint at the enormous potential for tomorrow's holographic games.



Make a $500 Hologram

While costs of building a laboratory can run into millions of dollars, you can assemble the necessary equipment to make holographic images 2⅔" square for about $500. Here are the basic ingredients:

* **A quiet, vibration-free table:** This is a must, because you use sensitive optical components to make a hologram and noise vibrations can upset the settings.
* **A laser:** the most expensive of the items is also the most necessary. The price of a laser is determined by its power.
* **Film:** Special plates are needed to record the holographic image in an emulsion, not unlike the plates used in portrait cameras.
* **Chemicals:** A hologram is not a photograph, but the process of developing the image is similar.
* **Lenses and mirrors:** These manipulate the laser beams, creating the holographic effect.
* **A darkroom:** This is needed both to create a hologram and to develop the plates. (A bathroom can be turned into a darkroom, so, unless you don't have indoor plumbing, this is a low cost item.)

There are many how-to books and supply houses that can help. Those listed below are recommended by experts in the field.

A Guide to Practical Holography, by C. Outwater and E. Van Hammersveld. (1974) $12.50 A beginner's manual.

Homegrown Holography, by G. Dowbenko. (1977) $8.95 Gives practical information about lab construction and optics for the beginner.

Holography Handbook, by Unterseher, Hansen and Schlesinger. (1982) $16.95 An excellent manual offering beginner and advanced techniques, in clear step-by-step chapters. Lists equipment vendors.

Equipment can be purchased from:

Edmund Scientific Co.
101 East Gloucester Pike
Barrington, NJ 08007
(609) 547-8900

Melles Griot
1770 Kettering St.
Irvine, CA 92714
(714) 556-8200

Thanks to the following for providing photos: Museum of Holography, Fritz Goro, Nancy Safford, Brad Cantos, Andy Pepper, Paul Barefoot, Taito America.

COMPUTER WORKOUT

The Big APPLE II

By Jules Gilder

Should the first computer be your first?

You're inside an ancient Aztec pyramid searching for the golden idol. Descending deep into the heart of the temple, you meet cobras, scorpions, giant lizards and hostile Aztec guards. Hidden trap doors and strange collapsing death rooms appear out of nowhere. You must be ready to fight, run, jump or crawl to safety at a moment's notice in order to escape alive.

Or, maybe you're trapped on the rim of a strange space warp created by beings from a parallel geometric universe. You watch in horror as their fleet of ships swarms out of the warp on a voyage of conquest. You alone can prevent the impending doom, but it isn't easy because normal strategy doesn't work. You have to fight by their strange rules. Will you be able to save the day?

These are scenarios for two of the hottest new computer games to hit the market, *Aztec* and *Tubeway* (which is similar to the arcade game *Tempest*) and they are both available for the Apple II computer. But these are only a few of the multitude of games that you can play on the Apple. From high-resolution graphic adventure games to interactive space games, the Apple II can provide endless hours of fun. Let's take a look at how it came to be.

On the heels of the enormous success of *Pong*-type video games in 1975, and long before the personal computer became as popular as it is today, two young men in California, both of them named Steve, decided it would be nice to have their own computer to write games and other useful programs on. So Steve Jobs, who worked for Atari, and Steve Wozniak, who worked for Hewlett-Packard, pooled their talent and designed the first single-board, all-in-one computer—Apple I.

The Apple II (left) with two disk drives, a printer and monitor. You can play games as well as render hi-res graphics such as those at right.

Most people don't remember the Apple I because it enjoyed a very short life (about one year) before it was replaced by the computer that over 700,000 people now enjoy—the Apple II. The 200 people who bought the original Apple were given an opportunity, which many of them took, to trade in their Apple I and get a discount on an Apple II.

Two other computers were introduced at about the same time—the Radio Shack TRS-80 Model I and the PET 2001 computer. Today, six years later, only the Apple II remains.

The Apple II Plus computer, as it is known today, features high-resolution color graphics, a 52-position, typewriter-like keyboard and 48K of RAM (Random Access Memory). A few years ago, the standard Apple used to come with game paddles that plugged into the computer. That was discontinued so, although the socket is still there, you have to buy paddles from Apple separately. Instead of buying the paddles, however, you'd probably be better off buying one of the many joysticks available for the Apple. With all of the fast-paced action games available today, you'd find it awkward adjusting two dials simultaneously instead of manipulating a single joystick. Joysticks are available from most computer stores or by mail for between $30 and $60.

Multiple Windows

The computer has five display modes, a text mode to which the computer is normally set when power is turned on, two low-resolution graphics modes and two high-resolution graphics modes. In the text mode, the Apple will normally display up to 24 lines of text with a line width of 40 characters. But for those people who want to do word processing and prefer longer lines, plug-in cards are available that will double the line width to 80 characters.

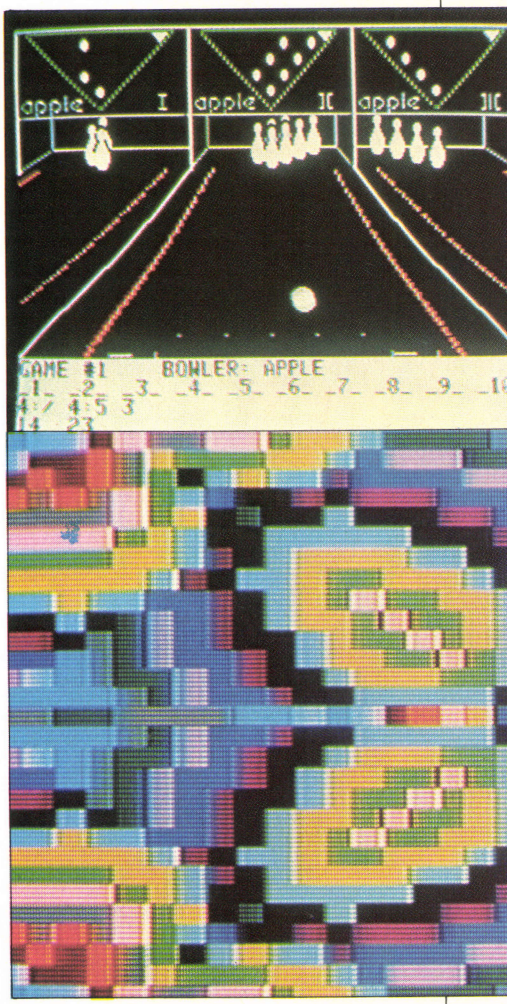
In the text mode it is possible to divide the screen into multiple windows, each of which is fully programmable. This feature comes in handy when certain sections of the screen are needed to retain constant information while others need to be updated. Each window has its own scrolling capability, and each can be cleared separately. Text on the Apple can be displayed in normal (white on black), in inverse (black on white) and in flashing (a mode that alternates between normal and inverse).

In the low-resolution graphics modes, the Apple can display any of 16 different colors (including black and white). In the full graphics mode, the resolution is 40-by-48 graphic elements. In the second low-resolution graphics mode, you get only 40-by-40 graphic elements but you also get room for four lines of text on the bottom of the screen. While many interesting games can be written using this graphics capability, to play games that are similar to the arcade games, it is necessary to use one of the high-resolution graphics modes.

Tricks and Textures

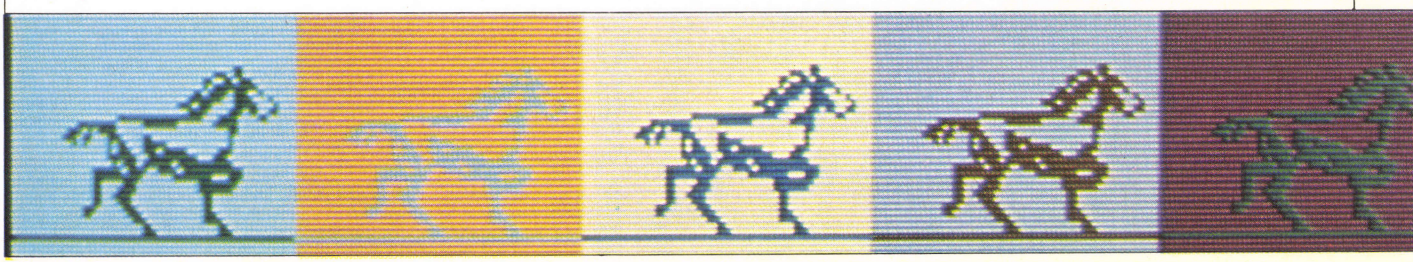
Although the high-resolution graphics mode on the Apple II was designed to display only six colors—black, green, blue, violet, red and white—programmers have come up with a variety of tricks that permit over 200 colors and textures.

The full high-resolution mode has 280-by-192 elements on the screen. This resolution is fine enough to permit the user to define his own character set. Thus it is possible to design a character set that can squeeze as many as 70 characters per line onto the screen. Character generator programs that use the high-resolution graphics screen are popular because they are an inexpensive alternative to buying an 80-column display card. Another reason for their popularity is that the Apple II has no built-in capability to display lowercase characters (small letters), something character generator programs can do. There are, however, several companies that manufacture lowercase hardware adapters that plug into the Apple. These range in price from $30 to $60.



Above: In addition to thousands of games, Apple users have a choice of many other types of programs.

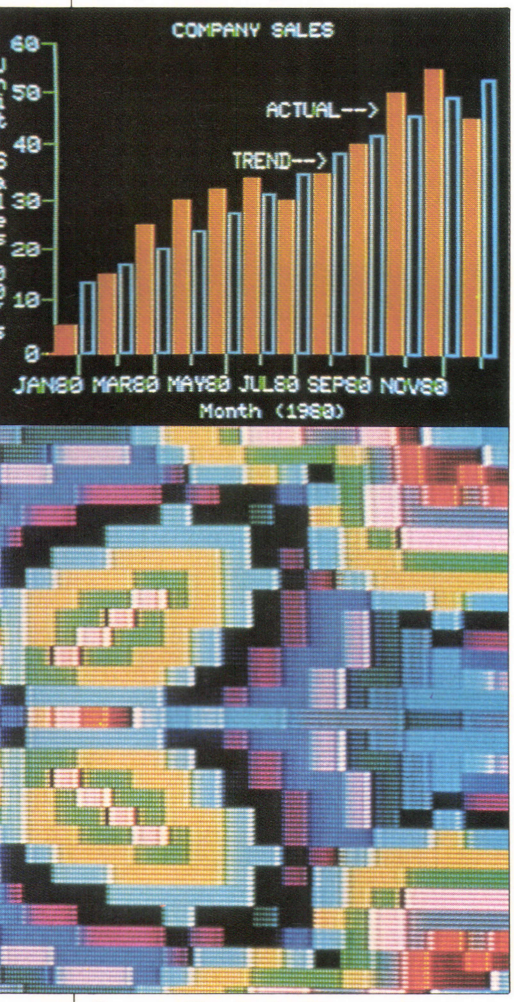
The second high-resolution mode, like the second low-resolution mode, permits a high-resolution screen to be displayed with four lines of text at the bot-



tom. In this case, screen resolution is only 280-by-160 elements.

Pick A Card

One of the really nice features of the Apple II is that it has room to plug in up to eight additional accessory cards. These cards perform a variety of functions ranging from permitting the addition of a disk storage device to providing a connection for a computer printer. Other cards that are available for the Apple include: a speech recognition card, a variety of speech synthesizer cards (so you can have a computer that talks as well as listens to you), a music synthesizer and electronic organ keyboard card that lets you generate electronic music, and a burglar alarm card that not only guards against someone breaking into your house, but also dials the police and turns lights and appliances in the house on and off so potential burglars will think you're home even when you're not. Also available are: memory expansion cards, cards that allow the Apple to talk to other computers by telephone, cards that allow the Apple to use other microprocessors such as the Z80, 6809, 8088 and 68000 micros and many more.



Bottom: The Apple II is capable of rendering high-resolution graphics in over 200 colors.

There's a price to be paid for this expandability and versatility and that is its price. At a cost of about $1500, the Apple II computer is about ten times more expensive than the average video game machine. It is, however, more than ten times as *powerful* and *useful* as a video game.

While the Apple II computer is probably one of the best personal computers around, it's not perfect. Some useful features are lacking. First, as was mentioned earlier, it comes out of the box with no lowercase capability. All entry of information from the keyboard is done only in capital letters. So, if you're interested in entering lowercase letters, it's going to cost you extra to get an adapter.

Unlike some computers, the Apple has no built-in video display. Instead, it must be used with a television set or video monitor. If you're planning to use it with a television set, you're going to have to buy a modulator to make the two work together. The modulator converts the Apple's video signal to a television signal that can be fed to a television's antenna terminals. Modulators cost about $30. Black and white monitors are fairly inexpensive today (under $100) and with the coming of component TV, color monitors can be expected to drop in price, too.

While the Radio Shack Color Computer, Atari and Texas Instruments computers allow the sound generated by the computer to be played back through the speaker of a TV, the Apple does not. Sound only comes out of the built-in speaker, resulting in poor quality, low volume audio. Once again, however, if this is important to you, there are accessories that will let you reroute the sound destined for the Apple's internal speaker to a TV or external amplifier.

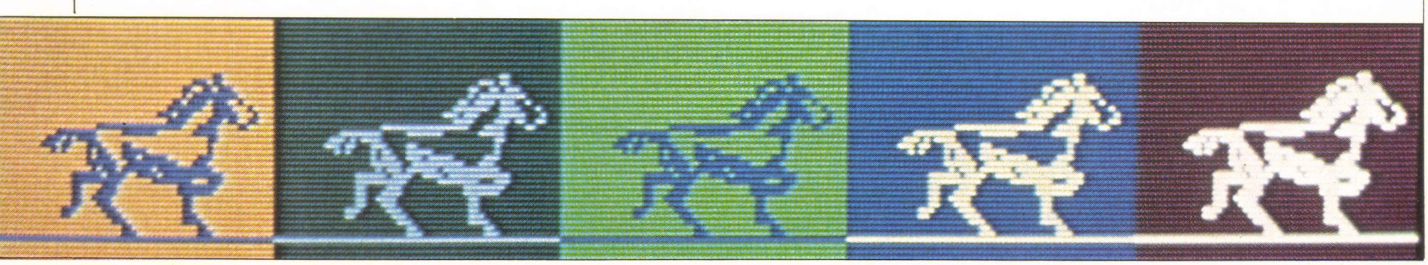
Software

One of the most popular applications for the Apple II computer is games and there are plenty of them around. Games for the Apple include versions of the latest arcade games, intriguing adventure games as well as more thought-provoking games like chess, checkers and *Othello*.

But games are not the only kind of programs that you'll find for the Apple. For those of you who plan to go to college, there are programs that will help you prepare for the Scholastic Aptitude Test (SAT). And if you write a lot of term papers for school, you might find it very handy to have a computer which can talk to the *New York Times'* computer through the use of one of the communication networks such as The Source, and, in this way, do research on the topic you select. Or you can connect your computer to the United Press International news system and get up-to-the-minute news reports even before they appear in the newspaper.

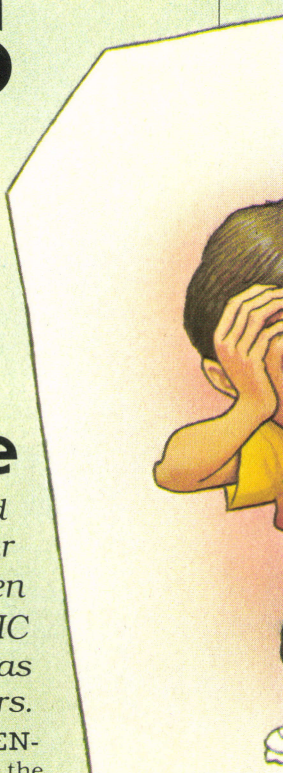
While you're working on your term paper or dissertation, you might want to consider using a word processor with your Apple to produce a beautifully typed, pro-

Continued on page 97



Parlez-vous BASIC?

By Randi Hacker



Computers as a second language

Have you always wanted to learn a second language but never did because you (a) felt inhibited speaking to native speakers; (b) felt your accent was for the birds or (c) were afraid of being ridiculed? If so, then BASIC is the perfect language to adopt as your second language. BASIC stands for Beginners All-Purpose Symbolic Instruction Code and was developed to enable people like you to communicate with computers.

Computers, you see, are patient teachers. Any mistake you make will not be met by grimaces or belittling laughter. The computer will simply tell you, in one way or another, that it doesn't understand and will give you countless chances to do it over until you get it right. And although BASIC will not enable you to *converse* with aliens, it will, eventually, enable you to create your own aliens. Programs you will learn to write will take you to plenty of exotic lands. With computers, you're not bound by conventional geography either, by the way.

Most second language courses teach you useless things like "*La plume de ma tante.*" This course, brief though it may be, is designed to give you a working knowledge of BASIC—one that you can put to use at once without having to spend hours in a language lab. And while you may not achieve absolute fluency after reading this and the subsequent articles in the series, you'll certainly be able to make yourself understood to your computer.

Programs are not frightening. Think of them as tasks that have been broken down into the simplest and most direct of commands. Each task that you want the computer to perform must be explained in a way that the computer understands. Remember, computers are dumb. Very dumb. No matter what you've heard in the past, computers know nothing until you tell them what they're supposed to know. So, rule number one when you're programming is to figure out precisely what you want the computer to do and then, in a series of progressively numbered and simple (very simple) steps, instruct it to do just that.

There are several things that you've got to remember when working with a computer, but two of them bear mentioning right off the bat. First, after you've written in a line, you must hit the RETURN (or GO or ENTER) key to return the cursor—the square which indicates your position on the screen—to the left margin. Hitting RETURN enters the line into the computer's memory. Second, before starting a new

program, type **NEW** and hit **RETURN**. This clears the computer's memory so that you can start out fresh.

First, a few key phrases that will come in handy:

• **NEW**—Type this after each little program you run. It clears the computer's memory and lets you start over on a clean slate.

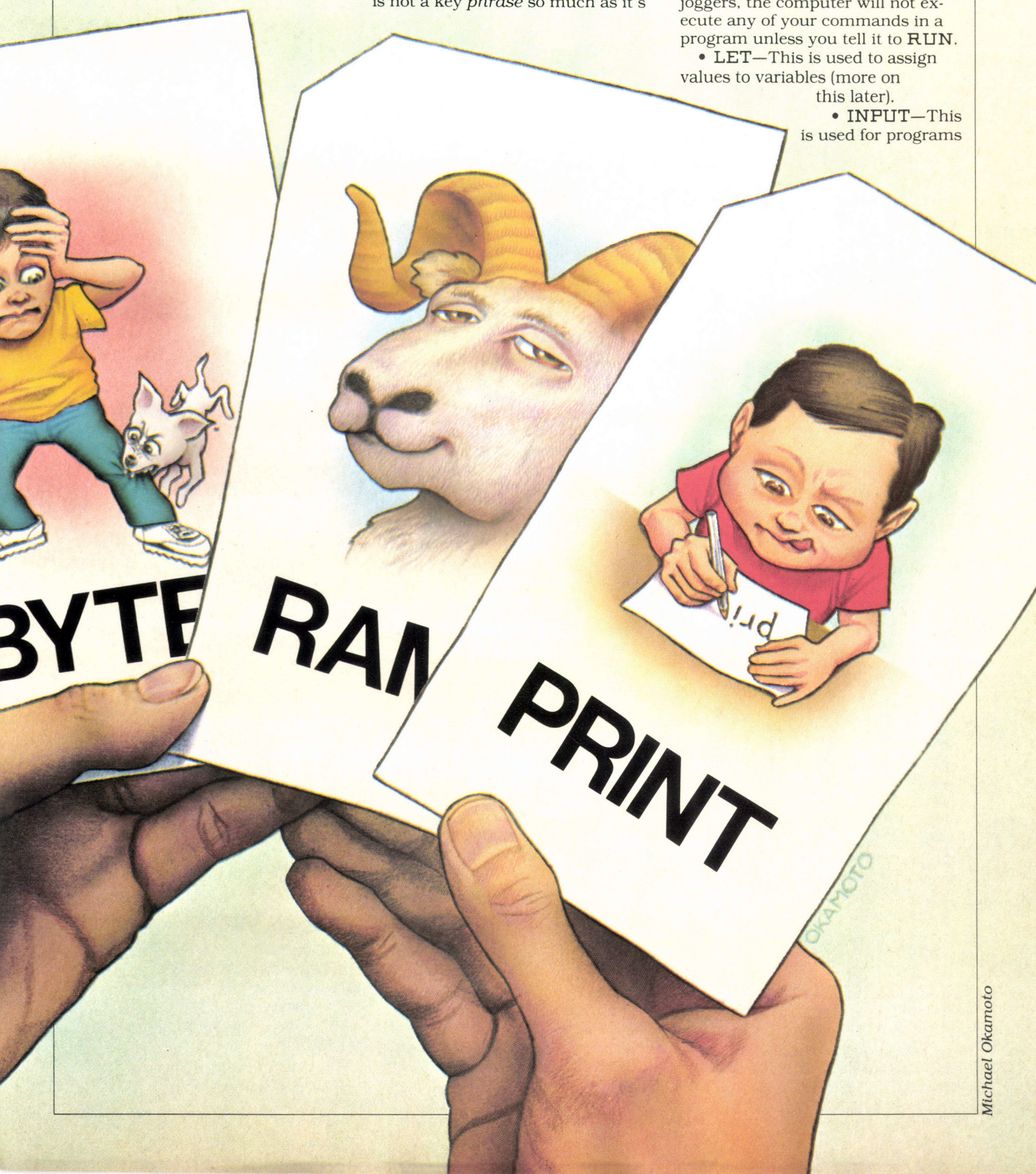
• **PRINT**—This is always typed in before you give the computer any **PRINT** commands at all.

• **RETURN**—This, technically, is not a key *phrase* so much as it's a key *key* located on the keyboard. On some computers, it will be represented by **GO** or **ENTER** but, whatever it's called, it's a key you'll be using a great deal so find it and don't forget its location.

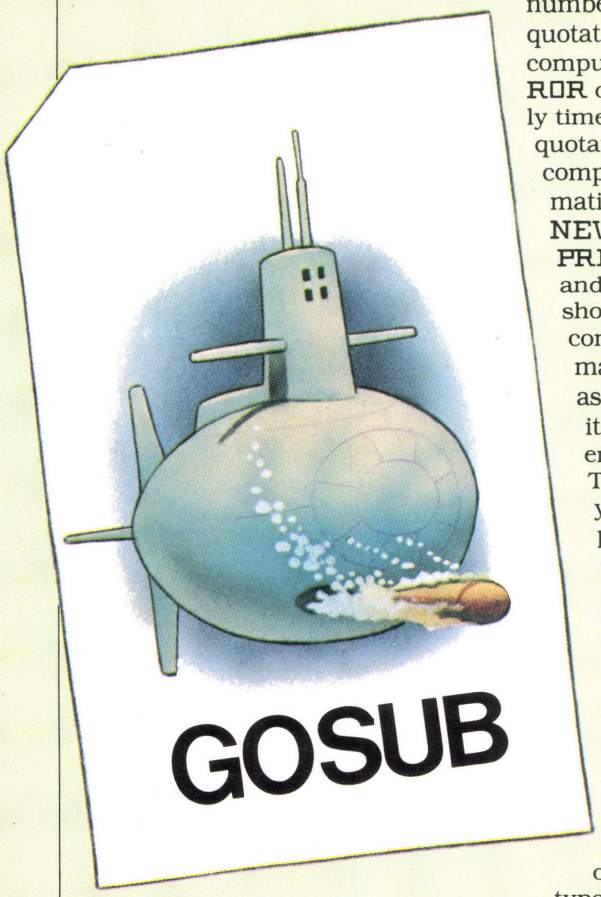
• **RUN**—Unlike many fanatic joggers, the computer will not execute any of your commands in a program unless you tell it to **RUN**.

• **LET**—This is used to assign values to variables (more on this later).

• **INPUT**—This is used for programs



Michael Okamoto



that are interactive—ones in which you and the computer have a "conversation."

Okay. Let's try something. Type:

```
HEY! I'M READY!
```

Now, hit **RETURN**. What should have happened is that the computer responded by printing a message something like this:

```
? ERROR
```

This is because the computer doesn't understand English. You've got to translate the command into a language it *does* understand. You can do that by either using direct commands or programs. To begin, we'll deal with direct commands. The direct mode will let you make the computer print exactly what you've typed in immediately. You can't do anything really complex in the direct mode. Try this:

```
PRINT "LA PLUME DE MA
TANTE"
```

and hit **RETURN**. The computer should have responded by printing:

```
LA PLUME DE MA TANTE.
```

Notice the use of quotation marks. Whether using the direct mode or the indirect mode, whatever you want printed (except numbers) should be placed within quotation marks. If they're not, the computer will respond with **? ERROR** or something similar. The only time you don't want to use quotation marks is if you want the computer to evaluate what information you've given it. Try this:

```
NEW
PRINT 3+4
```

and hit **RETURN**. What you should have gotten was 7. The computer evaluated the information instead of printing it as it was typed in. If you want it to print 3 + 4, you must enclose it in quotation marks. The indirect mode allows you a lot more complexity in programming. The major difference between direct and indirect is a direct command is executed but not remembered while an indirect command is stored. A number is assigned to each line of an indirect command. This tells the computer to remember it by giving it an address. With indirect commands, **RUN** must be typed in order to execute the program. Let's try one.

```
10 PRINT "HEY! I'M READY!"
RUN
```

Hit **RETURN**. The computer should have responded by printing:

```
HEY! I'M READY!
```

Each command must be preceded by a number. It doesn't matter which numbers you use, only that they be in the sequence in which you want the tasks performed. If you finish a program and find, let's say, that you've left out one crucial step, you can always insert that step into the program by assigning it a number that falls after the step it is meant to follow and before the next step. For this reason, it is good practice to assign each line numbers that are about 10 digits apart. (10, 20, 30, etc.) Also, unlike a typewriter, the letter "L" cannot be used interchangeably with the number "1". This will not compute.

Let's try a short program.

```
NEW
10 PRINT "HEY!"
20 PRINT "I'M"
30 PRINT "READY!"
RUN
```

and hit **RETURN**. The computer should have printed:

```
HEY!
I'M
READY!
```

Now, let's say you no longer care for line 10 as it is. You want to remove it. Easy. One way to do it is to type the line number (10) and then **RETURN**. Then type **LIST** and the computer will show you that it has deleted line 10. Want to add a new line? Fine. Underneath the last line listed, type:

```
25 PRINT "NOT"
```

Now type **LIST** and hit **RETURN**. Your new program will read:

```
20 PRINT "I'M"
25 PRINT "NOT"
30 PRINT "READY"
```

Now type **RUN**, hit **RETURN** and the computer will run the program. You can use **LIST** anytime you want to see the steps as you've listed them. Note that the computer rearranged the commands so they fell in numerical order. The computer is nothing if not orderly.

You can also change lines this way. Simply type in the line you want to change at the bottom of the program. If you assign it the line number of the line it is to replace, it will replace that line. The original line with that number will be exiled forever. Example:

```
25 PRINT "NEVER"
```

RUN and hit **RETURN**. The new progam will read:

```
I'M
NEVER
READY!
```

Shortcuts

By now you have probably gotten pretty tired of typing **PRINT** in every line. There are shortcuts. Most computers allow you to use another character to represent **PRINT**. On the Atari 800, for example, the "?" stands for **PRINT** while on the TS 1000, simply hitting the "P" key will print **PRINT** for you. Try this:

```
10 ? "I'M"
20 ? "READY!"
```

RUN and hit **RETURN**. Did it work?

Let's try something a little more complex. It's called the **LET** function. Using **LET** you can assign values to variables

(in other words, letters). Try this:

```
NEW
10 LET A=3
20 LET B=7
30 LET C=10
40 PRINT A, B, C
RUN
```

The computer will respond by printing out the values you've assigned the variables. LET is optional. For a short cut, simply type the variable, = and the value you've assigned to it.

You'll notice that the numbers are spread out across the screen so now is a good time to talk about commas and other punctuation.

In the PRINT statement, a comma instructs the computer to space the variables widely. A semicolon, on the other hand, will squeeze the variables together. You may end up with a print out like this using semi-colons: 3710. Some computers allow space in front of numbers, others don't. If yours doesn't do that automatically, you'll have to compensate by adding that space yourself.

Semicolons

Notice the lack of a semicolon after the final C. You can use the semicolon (or the comma) after the final variable and this is what will happen. If you type:

```
10 PRINT A; B;
```

then, later in the program, want to print C, when you type

```
30 PRINT C
```

the computer will print C on the same line as A and B. See?

Similarly, going back to the first program, if you type:

```
10 PRINT "I'M ";
20 PRINT "NOT ";
30 PRINT "READY "
```

the computer will print the statement all on one line.

Something that bears mentioning here is what value the computer will assign the variable. For example, if you type:

```
10 LET A=5
20 LET B=10
30 LET A=15
```

the computer will let A equal 15. The last value assigned is the one that's kept (just like the last line that is put on a program, if it has the same number as a line already in that program, will replace that line). The original value is gone forever. By the way, A, B, C, etc. can be only

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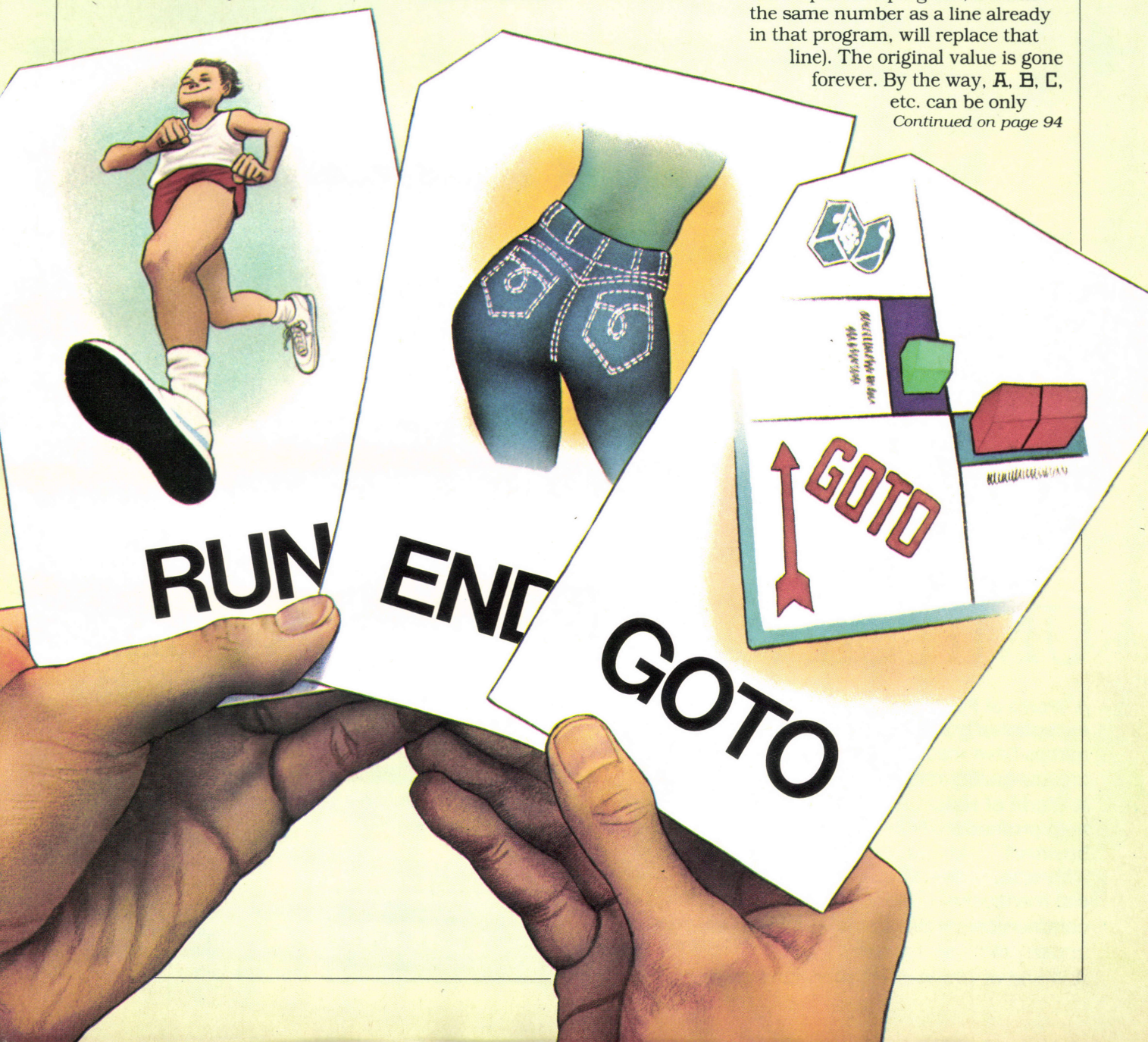

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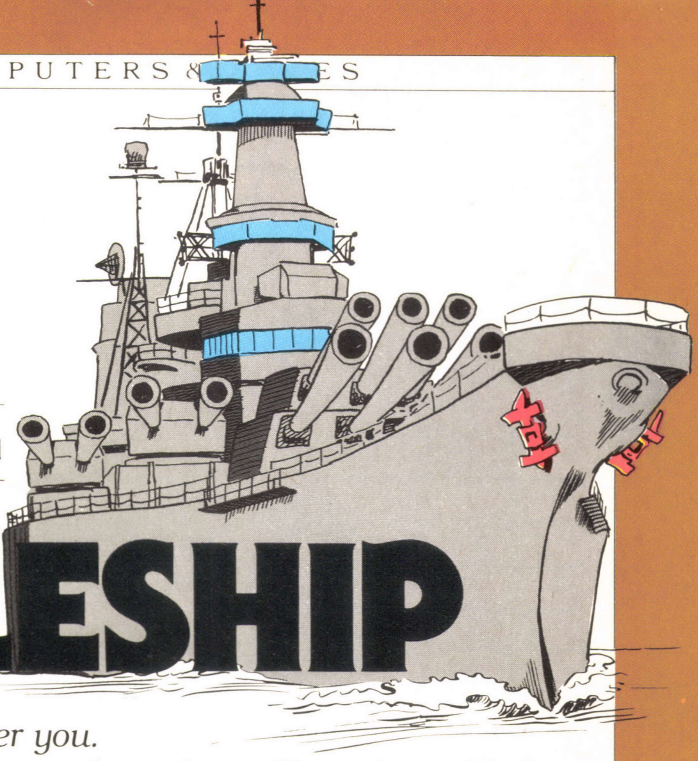


FIRST SCREENING

BATTLESHIP

We're waiting to discover you.

Send us a game program that you've written and maybe we'll send you $100. Each month in First Screening, *we're going to print a program that one of our readers has written. If you think you have hidden talent as a game designer and you have a game that you think deserves recognition, send it to us. Be sure to let us know which computer it's for and include the complete computer printout. For more information on how to enter,* *see page 84.*

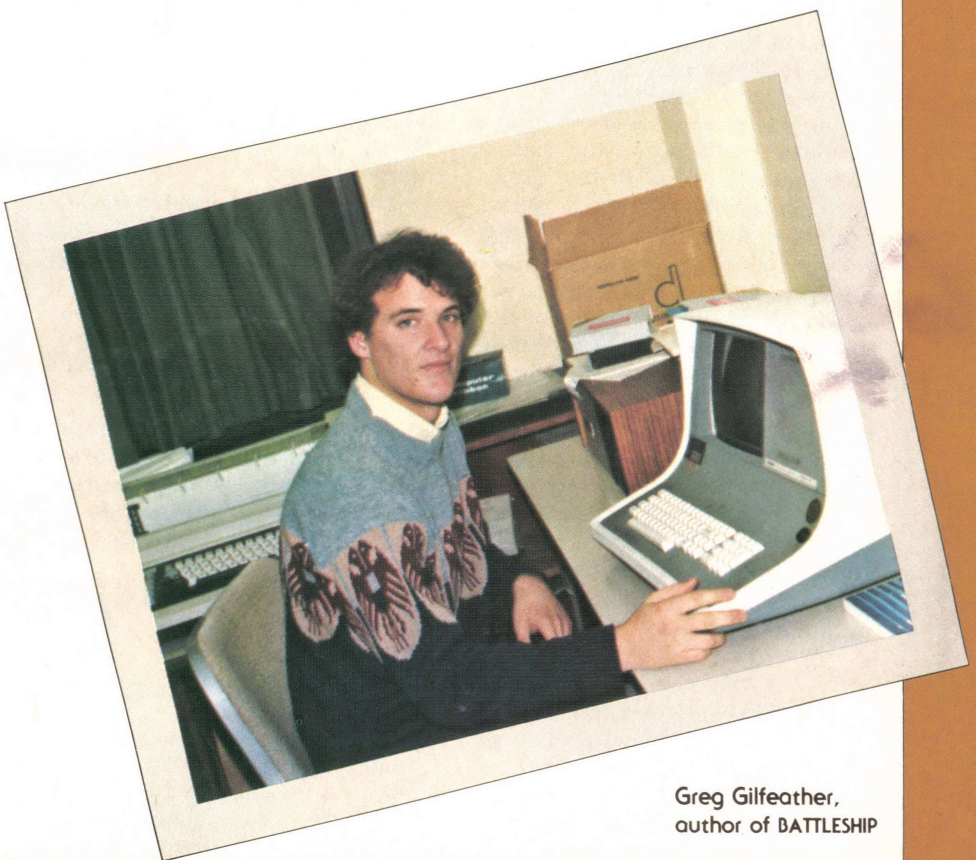
This month's winner is Greg Gilfeather. Greg is a sophomore at the University of Nebraska in Lincoln. He is majoring in computer science. He owns a VIC-20 but his game, a computerized version of Battleship, *was written for the Northstar computer.*

BATTLESHIP

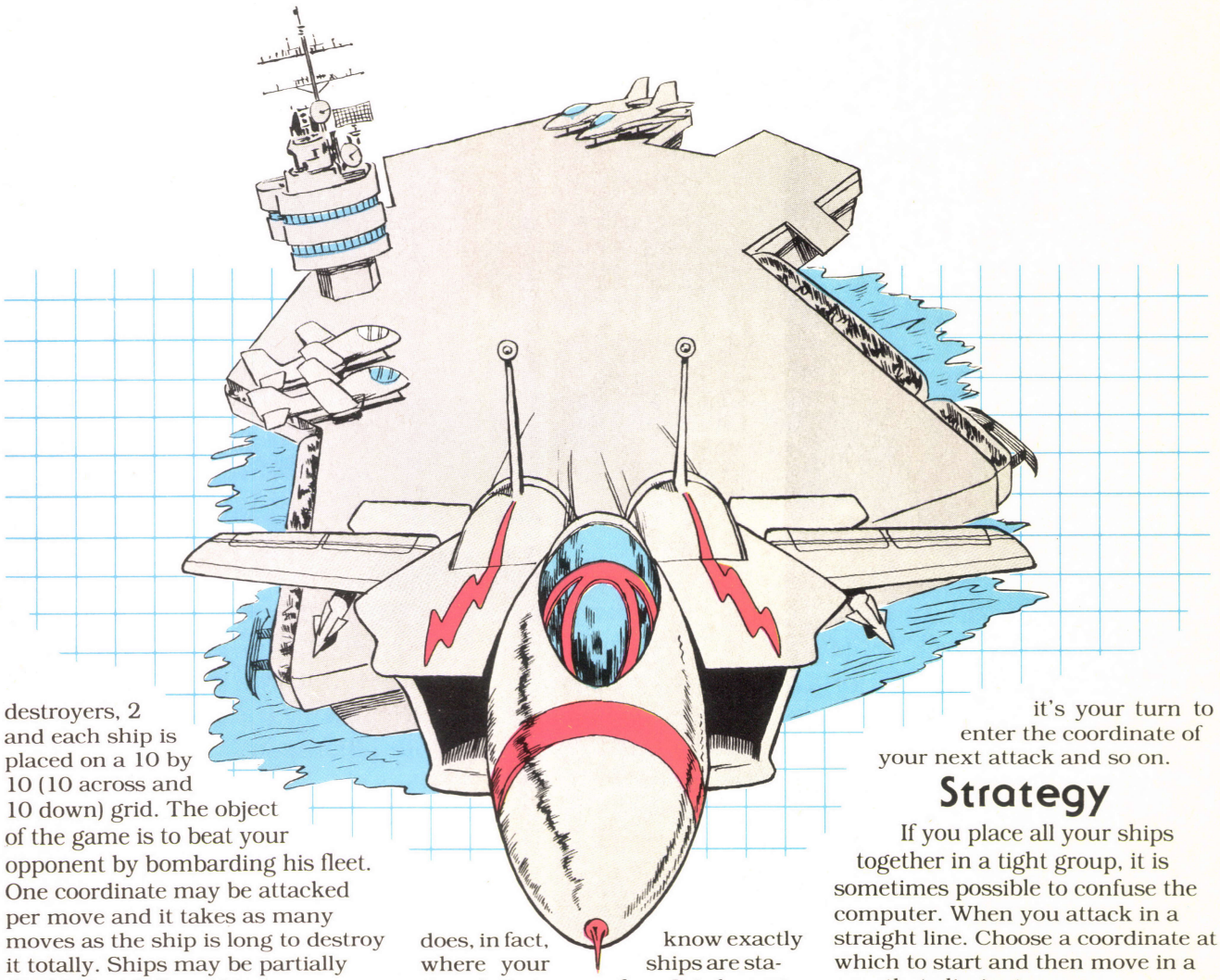
Battleship is a computerized version of the strategy game of the same name. It's an interactive game that was written in Northstar BASIC but, with a few modifications, can be played on any computer. It's real straight forward except that the computer is very good at it. That's where the challenge comes in. The computer does *not* make mistakes. But don't despair. It's still possible to confuse it. You can even win if you play your ships right.

How to Play

In the game of *Battleship*, you are the commander of a naval fleet consisting of five ships—an aircraft carrier, a battleship, a cruiser, a submarine and a destroyer. The computer commands an identical fleet. Each of the ships is a specific size—carriers are 5; battleships, 4; cruisers, 3; submarines, 3 and



Greg Gilfeather, author of BATTLESHIP



destroyers, 2 and each ship is placed on a 10 by 10 (10 across and 10 down) grid. The object of the game is to beat your opponent by bombarding his fleet. One coordinate may be attacked per move and it takes as many moves as the ship is long to destroy it totally. Ships may be partially disabled with fewer hits.

The computer generates a grid at the outset of the game and then asks you where you wish to place each ship. You then type in the coordinates. Actually, you only have to type in whether you want that ship positioned horizontally or vertically (the computer asks you this) and then enter the first coordinate (across first, down second). The computer takes care of the rest. For example, let's say you want your carrier to extend horizonatlly from 5.5 to 10.5. First you type in "H" to let the computer know you wish it to be horizontal, then you type in the first set of coordinates 5.5. The computer will entend it to 10.5 automatically.

Cheating

This brings us to a point most of you are no doubt wondering about by now—namely, does the computer know where you've positioned your ships? The answer is yes. It does, in fact, know exactly where your ships are stationed. But, never fear. It is honest and will not peek into its own CPU for the information. The computer doesn't cheat.

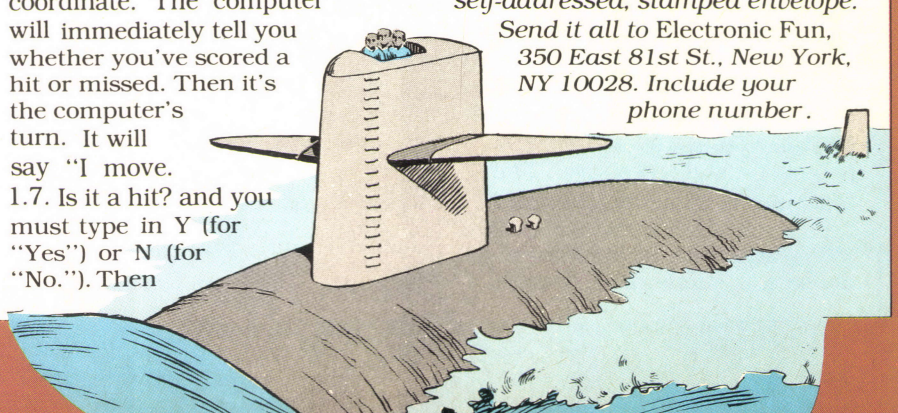
It is also impossible for you to cheat, by the way. Since the computer knows where your ships are, you can't tell it it missed when it was actually right on the money with its missile. Not only is it honest, but it keeps you honest, too.

Being courteous, the computer lets you move first. It will ask you where you would like to send your first missile. You then type in the coordinate. The computer will immediately tell you whether you've scored a hit or missed. Then it's the computer's turn. It will say "I move. 1.7. Is it a hit? and you must type in Y (for "Yes") or N (for "No."). Then it's your turn to enter the coordinate of your next attack and so on.

Strategy

If you place all your ships together in a tight group, it is sometimes possible to confuse the computer. When you attack in a straight line. Choose a coordinate at which to start and then move in a way that eliminates as many possibilities as possible. Moving diagonally across the board works well. I've also found that attacking coordinates in a random way to begin with and then proceeding from one or another point in a more orderly fashion in a very effective strategy.□

In order for us to consider your entry, we need the following items: a complete computer program, a brief game description, photographs or drawings of the graphics, a picture of you and a self-addressed, stamped envelope. Send it all to Electronic Fun, *350 East 81st St., New York, NY 10028. Include your phone number.*



```
1 D=1
10 REM BATTLESHIP PROGRAMMED BY GREG
20 DIM A(10,10),B(10,10),S$(60),L(10),P(10,5)
25 REM A IS COMPUTERS SHIPS AND PLAYERS ATTEMPTS
26 REM B STORES COMPUTERS ATTEMPTS AND PLAYERS SHIPS
27 REM L IS LENGTH OF SHIP S$ IS NAME P STORES POSITION
30 S$="     DESTROYER SUBMARINE CRUISER   BATTLESHIPCARRIER
55 L(1)=2\L(6)=2
60 L(2)=3\L(7)=3
65 L(3)=3\L(8)=3
70 L(4)=4 \ L(9)=4
75 L(5)=5\L(10)=5
99 REM MAIN PROGRAM
100 GOSUB 1500  \ REM INSTRUCTIONS
105 FOR X=1TO 4000\NEXT
106 PRINT #D,"ENTER YOUR LUCKY NUMBER"
107 INPUT #D,T
120 PRINT #D,"LET'S BEGIN"
130 GOSUB 1600  \ REM PLAYER ENTERS HIS SHIPS
140 GOSUB 2000  \ REM COMPUTER ENTERS ITS SHIPS
150 PRINT #D,"YOU HAVE THE HONOR OF GOING FIRST"
170 GOSUB 800  \ REM PLAYER MOVES
180 GOSUB 2500
190 GOTO 170
800 REM PLAYER MOVES
810 GOSUB 4000
811 PRINT #D,"ENTER THE COORDINATES OF YOUR NEXT ATTACK"
812 PRINT #D,"(X-ACROSS,Y-DOWN)"
815 INPUT #D,I,J
820 IF I<1 OR J<1 OR I>10 OR J>10 THEN GOTO 810
822 IF A(J,I)>3 THEN GOTO 830
825 ON A(J,I)+2 GOTO 840,930,835
830 PRINT #D,"YOU ALREADY HIT A SHIP AT ",I,",",J
831 GOTO 810
835 PRINT #D,"YOU ALREADY MISSED AT ",I,",",J
836 GOTO 810
840 A(J,I)=8
850 FOR K=1 TO 5
855 FOR H=1 TO 5
860 IF P(K,H)=I+(10*(J-1)) THEN GOTO 870
865 NEXT
866 NEXT
870 PRINT #D,"YOU JUST HIT MY ",S$(K*10,10*K+10)
875 S=0
880 FOR H=1 TO 5
881 X=INT(P(K,H)/10)+1
882 Y=P(K,H)-(X-1)*10
885 IF A(X,Y)=8 THEN S=S+1
890 NEXT
895 IF S<> L(K) THEN GOTO 940
900 PRINT #D,"IT IS IN THE PROCESS OF SLOWLY SINKING"
905 S3=S3+1
910 IF S3=5 THEN GOTO 950
920 GOTO 940
930 PRINT #D,"YOU MISSED"
935 A(J,I)=1
940 RETURN
950 PRINT #D,"YOU WIN GOOD GAME"
960 GOTO 5000
1500 REM RULES OF THE GAME
1505 PRINT #D,"WELCOME TO THE GAME OF BATTLESHIP. THE GAME CONSISTS OF"
1510 PRINT #D,"TWO OPPOSSING NAVIES EACH COMPRISED OF 5 SHIPS (CARRIER -5,"
1515 PRINT#D,"BATTLESHIP-4,CRUISER-3,SUBMARINE-3,DESTROYER-2). THE "
1520 PRINT #D,"OBJECT IS TO ATTACK THE OTHER PLAYER BY BOMBARDING HIS "
1525 PRINT #D,"FLEET. EACH MOVE ONE COORDINATE MAY BE ATTACKED. AS SOON AS"
1530 PRINT #D,"ONE PLAYER SINKS ALL OF HIS OPPONENTS SHIPS THAT PLAYER"
1535 PRINT #D,"WINS. THE BOARD IS 10 X 10 NUMBERED ACROSS 1-10 AND DOWN 1-10"
1540 PRINT #D,"X REFERS TO ACROSS Y TO DOWN.  GOOD LUCK"
1545 RETURN
1600 REM PLAYER ENTERS HIS SHIPS
1610 FOR K=1 TO 5
1615 GOSUB 3000
1620 PRINT #D,"PLEASE ENTER THE POSITION OF YOUR ",S$(K*10,K*10+10)
1630 PRINT #D,"DO YOU WISH IT PLACED HORIZONTALLY OR VERTICALLY (H OR V)"
1635 INPUT #D,X$
1640 IF X$="V" THEN GOTO 1655
1645 IF X$="H" THEN GOTO 1755
1650 GOTO 1620
1655 PRINT #D,"ENTER THE TOP MOST POSITION OF THE SHIP (X,Y) X-ACROSS,Y-DOWN"
1660 INPUT #D,I,J
1665 IF J<1 OR J>11-L(K) OR I<1 OR I>10 THEN GOTO 1655
1670 F=0
1671 I2=I
1672 J2=J
1675 FOR K2=1 TO L(K)
1680 IF B(J2,I2)=-1 THEN F=1
1685 J2=J2+1
1690 NEXT K2
1695 IF F=0 THEN GOTO 1700
1696 PRINT #D,"YOU ALREADY HAVE A SHIP THERE"
1697 GOTO 1615
1700 FOR K2=1 TO L(K)
1705 B(J,I)=-1
1710 P(K+5,K2)=I+10*(J-1)
1715 J=J+1
1720 NEXT K2
1730 GOTO 1830
```

```
1705 B(J,I)=-1
1710 P(K+5,K2)=I+10*(J-1)
1715 J=J+1
1720 NEXT K2
1730 GOTO 1830
1755 PRINT #D,"ENTER THE LEFT MOST POSITION OF THE SHIP (X-ACROSS,Y-DOWN)"
1760 INPUT #D,I,J
1770 F=0
1771 I2=I
1772 J2=J
1775 IF I<1 OR I>11-L(K) OR J<1 OR J>10 THEN GOTO 1755
1777 FOR K2=1 TO L(K)
1780 IF B(J2,I2)=-1 THEN F=1
1785 I2=I2+1
1790 NEXT K2
1795 IF F=0 THEN GOTO 1800
1796 PRINT #D,"YOU ALREADY HAVE A SHIP THERE"
1797 GOTO 1615
1800 FOR K2 = 1 TO L(K)
1805 B(J,I)=-1
1810 P(K+5,K2)=I+10*(J-1)
1815 I=I+1
1820 NEXT
1830 NEXT
1835 PRINT #D,"YOUR SHIPS ARE IN THE FOLLOWING POSITIONS"
1840 GOSUB 3000
1850 RETURN
2000 REM DETERMINE POSITION OF COMPUTERS SHIPS
2010 FOR K=1 TO 5
2020 R=RND(0)*10
2030 IF R>5 THEN GOTO 2200
2040 I=INT((RND(0)*9)+1)
2050 J=INT((RND(0)*L(K)-1)+1)
2060 F=0
2070 I2=I
2080 J2=J
2090 FOR K2=1 TO L(K)
2100 IF A(J2,I2)=-1 THEN F=1
2110 J2=J2+1
2120 NEXT
2130 IF F=1 THEN GOTO 2020
2140 FOR K2=1 TO L(K)
2150 A(J,I)=-1
2155 P(K,K2)=I+10*(J-1)
2160 J=J+1
2170 NEXT
2180 GOTO 2340
2200 I=INT((RND(0)*(L(K)-1))+1)
2210 J=INT(RND(0)*9+1)
2220 F=0
2230 I2=I
2240 J2=J
2250 FOR K2=1 TO L(K)
2260 IF A(J2,I2)=-1 THEN F=1
2270 I2=I2+1
2280 NEXT
2290 IF F=1 THEN  GOTO 2020
2300 FOR K2=1 TO L(K)
2310 A(J,I)=-1
2315 P(K,K2)=I+10*(J-1)
2320 I=I+1
2330 NEXT
2340 NEXT
2350 PRINT #D,"I HAVE PLACED MY SHIPS"
2360 RETURN
2500 REM COMPUTER MAKES MOVE
2505 IF F7<>0 THEN GOTO 2650
2510 I=INT(RND(0)*9+1)
2520 J=INT(RND(0)*9+1)
2530 IF B(J,I)=1 OR B(J,I)=8 THEN GOTO 2510
2535 PRINT #D,"I MOVE ",I,",",J," IS IT A HIT (Y OR N)"
2536 GOSUB 3000
2537 IF B(J,I)<>-1 THEN GOTO 2545
2540 INPUT #D,X$
2541 IF X$="Y" THEN GOTO 2580
2542 IF X$="N" THEN GOTO 2535
2545 INPUT #D,X$
2546 IF X$="N" THEN GOTO 2570
2550 PRINT #D,"ARE YOU SURE?"
2560 GOTO 2535
2570 B(J,I)=1
2575 GOTO 2980
2580 B(J,I)=8
2585 F7=1
2586 I7=I
2587 J7=J
2590 E=1
2600 GOTO 2980
2650 REM AFTER FIRST HIT FOLLOW UP HITS
2651 ON E GOTO 2653,2654,2655,2656
2653 I=I7+1\J=J7\GOTO 2660
2654 I=I7-1\J=J7\GOTO 2660
2655 J=J7-1\I=I7\GOTO 2660
2656 J=J7+1\I=I7\GOTO 2660
2660 IF I<1 OR I>10 OR J<1 OR J>10 THEN GOTO 2665
2663 GOTO 2670
2665 E=E+1
2667 GOTO 2651
2670 IF B(J,I)<1 THEN GOTO 2800
2675 IF B(J,I)=8 THEN GOTO 2675
```

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```
2665 E=E+1
2667 GOTO 2651
2670 IF B(J,I)<1 THEN GOTO 2800
2671 IF B(J,I)=8 THEN GOTO 2675
2675 I7=I\J7=J
2677 GOTO 2651
2680 E=E+1
2690 GOTO 2655
2800 IF B(J,I)=-1 THEN GOTO 2840
2805 GOSUB 3000
2810 PRINT #D,"I MOVE ",I,",",J," IS IT A HIT (Y OR N)"
2820 INPUT #D,X$
2821 IF X$="N" THEN GOTO 2825
2822 GOTO 2810
2825 B(J,I)=1
2830 E=E+1
2835 GOTO 2980
2840 PRINT #D,"I MOVE",I,J,"IS IT A HIT (Y OR N)"
2842 GOSUB 3000
2845 INPUT #D,X$
2850 IF X$="Y" THEN GOTO 2855
2851 PRINT #D,"ARE YOU SURE"
2853 GOTO 2840
2855 B(J,I)=8
2860 I7=I\J7=J
2861 S=0
2865 FOR K=6 TO 10
2870 FOR H=1 TO 5
2875 IF P(K,H)=I+10*(J-1) THEN GOTO 2885
2880 NEXT
2883 NEXT
2885 FOR H=1 TO 5
2886 X=INT(P(K,H)/10)+1
2887 Y=P(K,H)-(X-1)*10
2895 IF B(X,Y)=8 THEN S=S+1
2897 NEXT
2900 IF S<>L(K) THEN GOTO 2980
2910 S2=S2+1
2920 PRINT #D,"DID I SINK IT (Y OR N)"
2921 INPUT X$
2922 IF X$="Y" THEN GOTO 2930
2923 PRINT #D,"ARE YOU SURE"
2924 GOTO 2920
2930 IF S2<>5 THEN GOTO 2960
2940 PRINT #D,"I WIN GOOD GAME"
2950 GOTO 4500
2960 F7=0
2965 E=1
2980 RETURN
3000 REM HIS SHIPS

3010 PRINT #D,"YOUR SHIPS"
3011 PRINT #D," ","¦",
3013 FOR X=1 TO 10
3014 PRINT #D,%6I,X,
3016 NEXT
3017 PRINT #D
3018 PRINT #D,"-----------------------------------------------------------"
3020 FOR Z=1 TO 10
3025 PRINT #D,%2I,Z,"¦",
3030 FOR X=1 TO 10
3040 IF B(Z,X)=0 OR B(Z,X)=1 THEN X$="."
3041 IF B(Z,X)=-1 THEN X$="O"
3042 IF B(Z,X)=8 THEN X$="X"
3045 PRINT #D,"     ",X$,
3050 NEXT
3060 PRINT #D
3065 NEXT
3070 PRINT #D,"I'VE SUNK ",S2,"    YOU'VE SUNK ",S3
3080 RETURN
4000 REM HIS ATTEMPTS
4010 PRINT #D,"YOUR ATTEMPTS"
4011 PRINT #D," ","¦",
4013 FOR X=1 TO 10
4014 PRINT #D,%6I,X,
4016 NEXT
4017 PRINT #D
4018 PRINT #D,"-----------------------------------------------------------"
4020 FOR Z=1 TO 10
4025 PRINT #D,%2I,Z,"¦",
4030 FOR X=1 TO 10
4040 IF A(Z,X)=-1 OR A(Z,X)=0 THEN X$="."
4050 IF A(Z,X)=1 THEN X$="O"
4055 IF A(Z,X)=8 THEN X$="X"
4056 IF A(Z,X)=12 THEN X$="S"
4060 PRINT #D,"     ",X$,
4070 NEXT
4080 PRINT #D
4090 NEXT
4100 RETURN
4500 FOR J=1 TO 10
4505 IF A(J,I)=-1 THEN A(J,I)=12
4510 IF B(J,I)=-1 THEN B(J,I)=12
4515 NEXT
4520 PRINT #D,"HERE ARE MY SHIPS THEY APPEAR AS 'S' "
4530 GOSUB 3000
5000 END
```


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"Name This Game" Sweepstakes Official Rules

NO PURCHASE NECESSARY **Sweepstakes:** Hand-print your name, address, telephone no. and local store (name, address) displaying the new U.S. Games Cartridge on an Official Entry Form.* Check your Fifth Prize choice. Failure to do so invalidates your entry. **Contest:** To enter the contest, include the name you created for the new game. Mail entry separately before closing date, April 30, 1983, to "Name This Game" Sweepstakes, P. O. Box 7961, Chicago, IL 60680.

All sweepstakes prizes will be awarded. Winners will be drawn at random by independent judges. Winning odds depend on no. entries received. Sweepstakes winners submitting a name will be judged in the order originally drawn. First entry to score 100% on following basis is the Contest Winner *regardless of any other entries received with identical names.* a. Must be legible and free of existing trademark/copyright registrations b. Originality 30% appropriate to new game 30% c. General appeal 30% d. Tasteful 10%. If no entry wins, up to 10,000 additional entries will be judged with judges option to continue until one scores 100%. Contest prize may not be awarded.

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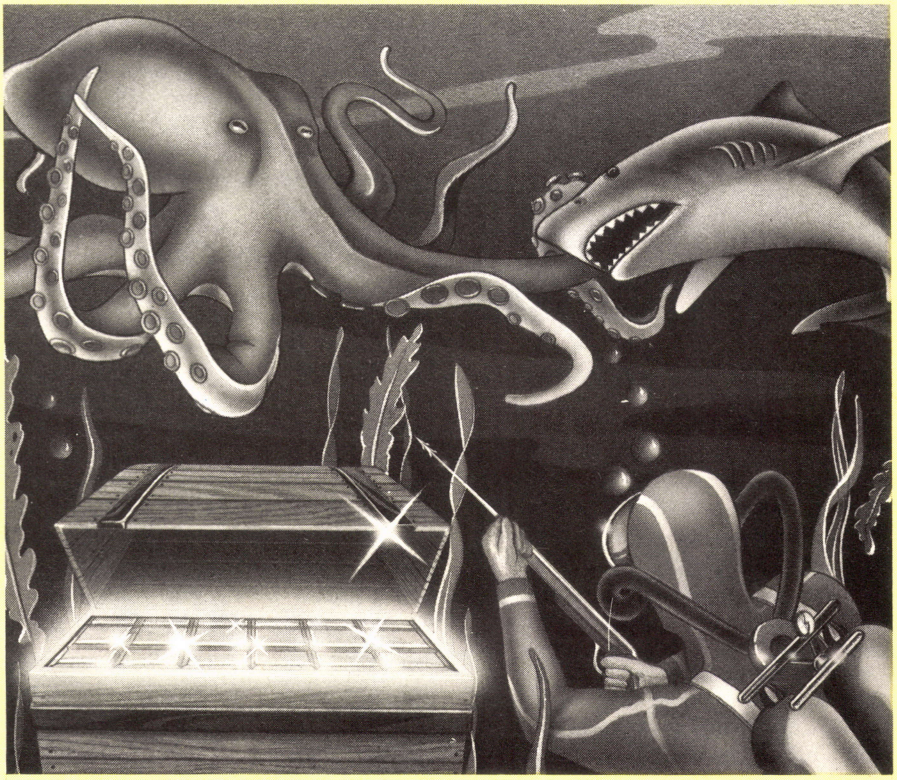

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Entry form can also be obtained by mailing to Entry Request, P.O. Box 4912, Chicago, Illinois 60680.

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the E.A.N. report

Play now, pay later

By Jens von der Heide

There are so many game systems and cartridges on the market these days that the purchase of a complete library could set you back several thousand dollars. For this reason, in order to choose a new system or game these days you practically need a crystal ball and a Swiss bank account number: the first to enable you to preview the game and the second, to afford them all. Since not too many stores carry crystal balls anymore and since unlimited funds are difficult (if not impossible) to come by, the next best thing is game rentals.

To begin with, they give you the option of a hands-on evaluation of a variety of machines and cartridges. One weekend you can rent a ColecoVision, the next, an Odyssey—and the rental of both could run you less than the purchase of one Atari cartridge. In addition, you can rent any one of the 400-plus game cartridges currently available. And better yet, if you like the game after having played it for a couple of days (at a cost of about $2, for the first two days and $1 for every day thereafter) you can deduct your rental fee from the purchase price.

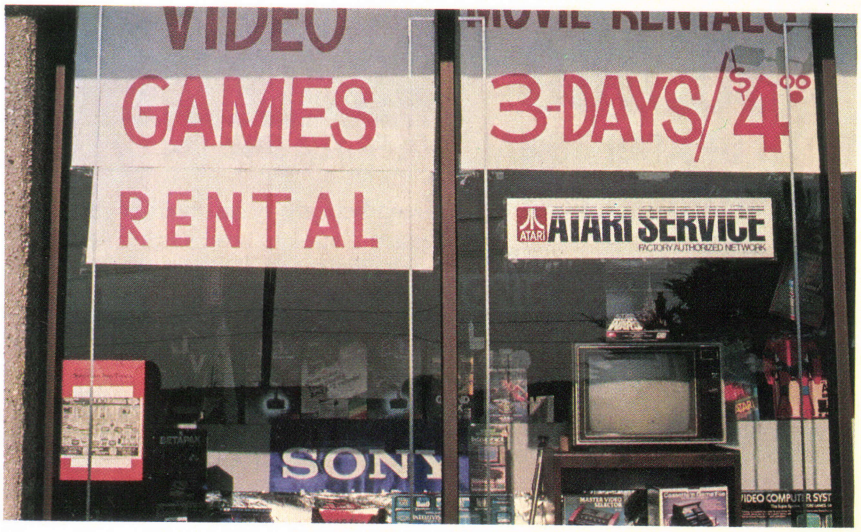
There are a couple of similarities in rental policies that you will find across the board. First, most stores require a deposit on the cartridge you want to rent. This is to make sure that you don't "forget" to bring the game back. And secondly, some form of ID will be required.

Rental Clubs

Some stores will require a club membership to discourage the occasional renter. With a club membership, a member gets cheaper rental rates and perhaps, several free rentals per month. If you plan to join a club, be sure to read all the fine print so you don't end up with a month-long membership when you were expecting a lifetime membership. If, however, you feel that deep inside you're only an occasional renter, the money you save by not joining a club (usually around $30) will rent you enough games at another store to satisfy your game hunger.

One big difference in policy is in responsibility. Find out if your dealer believes that accidents will happen. In other words, find out whose fault it would ultimately be if the game broke and whether you would have to sacrifice your deposit because of it. Most of the time retailers will give you your deposit back because the cartridges are protected by warranty. But ascertain this before you rent.

Another difference is in selection: You may not realize just how many cartridges there are and, if you don't shop around, you may also never find out. Choose a store which offers you the widest range so that you can make tests and compare. If you don't do this, how will you ever know which is better—*Frogger*, *Frogs & Flies*, *Frog Bog* or *Frog Pond?*□



Like Leisure 'Tronics of Chicago, many stores now offer video game rentals. You can become a member of a video game rental club for about $30 a year.

Photo by Jun Ogata

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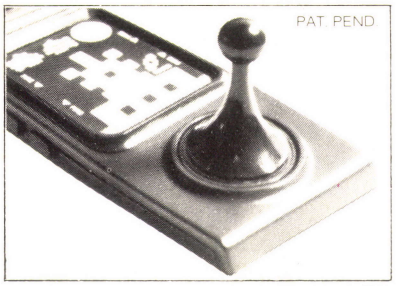

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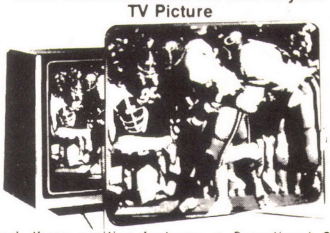

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COMING ATTRACTIONS

Continued from page 35

Mattel's expansive lineup among the show's flashy booths included two low-priced, stand-alone personal computers: a free-standing console called Aquarius and a revised version of Mattel's oft-promised Intellivision keyboard component. The Aquarius will sell for less than $200 beginning around February or March, while the Intellivision add-on keyboard is expected to cost under $150 with initial distribution starting next summer.

Aquarius has a maximum memory capability of 52K RAM (thus making it quite competitive with Atari 400, TI-99/4A, Commodore VIC-20 and Timex Sinclair 1000), CP/M compatibility, built-in Microsoft BASIC, 16-color graphics and the ability to display a total of 256 different characters on the screen. Peripheral products coming later will include a 40-column thermal printer, a data recorder and the Aquarius Mini-Expander which accommodates a memory cartridge and game cartridge and provides two hand controllers for enhanced game play. Four primary categories of plug-in software will be initially available including Education, Home Management, Personal Improvement and Entertainment. A low-priced LOGO language cartridge that does not require the purchase of additional hardware is also among planned software.

The Intellivision computer keyboard, which turns the video game system into a home computer, plugs into the Intellivision master component's 16-bit microprocessor. The system utilizes built-in BASIC program language and a range of software including color-coded graphics, which teach children through game play, a program in three-dimensional graphics combined with music and a new generation of sports games (to be announced). Users will also have the opportunity to program their own video games.

Telesys

Ironically, Telesys, the company that started the "food" game trend with *Fast Food*, decided to get back to video game basics with *Ram-It*. Reminiscent of *Breakout*, the game features colored bands moving closer to the center, leaving it up to the player to "zap" them back to the edge of the screen.

Fox Games

Hollywood movie and character offerings were previewed by 20th Century-Fox Games. Based on the movie and TV show and reportedly co-created by Alan Alda, the new *M*A*S*H* cartridge places you in the middle of the 4077th. You may not be able to play practical jokes on the nurses, but you do get to drive a jeep, pick up an injured soldier, round-up a doctor and nurse, get them to the O.R. and then accumulate all the necessary equipment for the operation before the patient expires. Now who said the Korean War wasn't fun?

Continued on page 96

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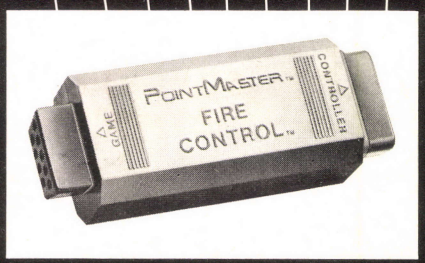

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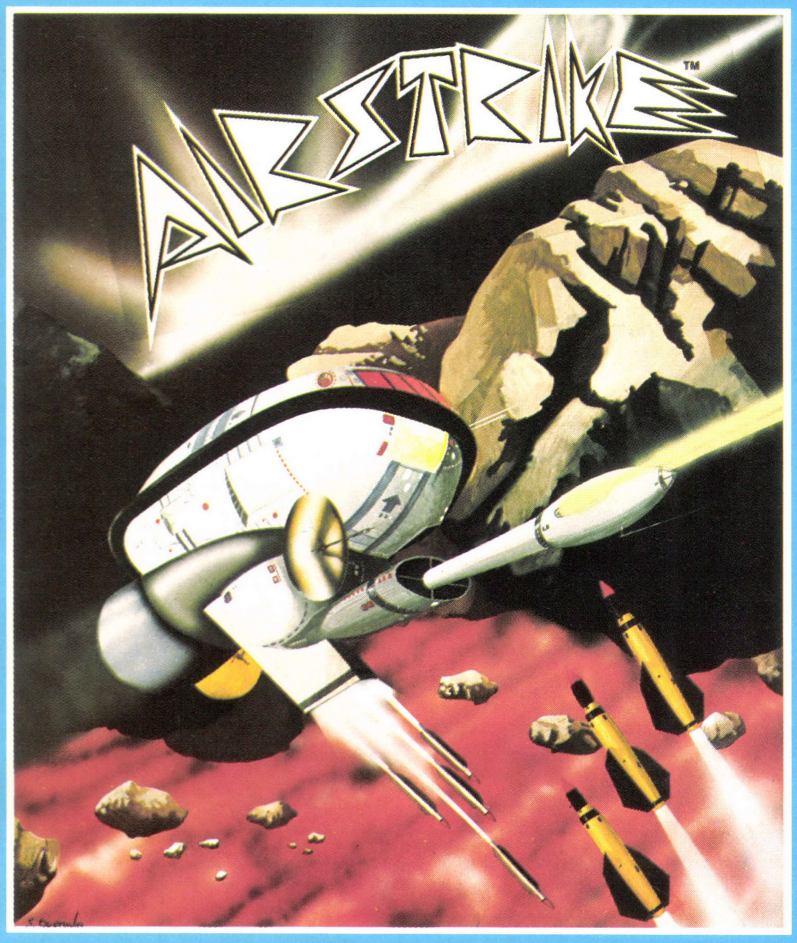

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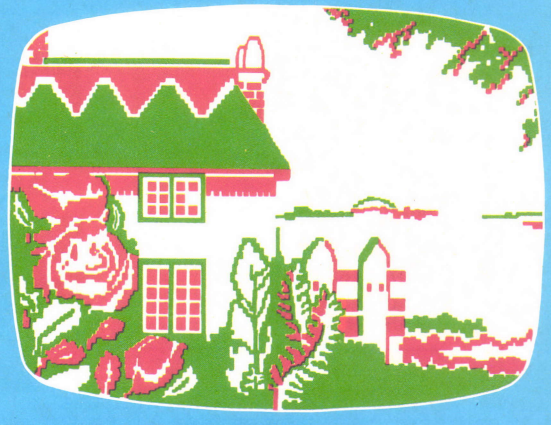

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BASIC

Continued from page 81

numbers. To assign words to variables, read on.

Not only can numerical values be assigned but strings, also. A string is a variable of one or more alphanumeric characters. String variables must be surrounded by quotes and cannot be assigned to letters (A, B, C). Numbers, however, can be assigned to string variables which are represented by a letter (A) followed by a $ (A$). Try this:

```
NEW
10 LET A$ = "GIMME"
20 LET B$="A"
30 LET C$="BREAK"
40 PRINT A$, B$, C$
RUN
```

Did the words come out very far apart? Separate the PRINT statement using semicolons (and don't forget to allow for spacing). There. That should have run better.

In some BASICs, such as the Atari, you can't assign values to strings variables like A$ without first telling the computer how many characters will be in the string. To do that, you've got to use the DIM command. DIM stands for dimension and it should be used at the beginning of all programs using string variables.

5 DIM A$ (10), for example.

The number in parentheses lets the computer know the maximum number of characters allowed in the string. Don't worry about using fewer characters than you've allotted for. Worry about using too many, however. The computer is very literal and will simply stop printing out the characters once it reaches the maximum. A good rule of thumb is to overcompensate.

Now that you can assign string variables, you can put together a pretty efficient interactive program using the INPUT command. Some computers allow for a prompt string which means a line prompting you to input the information can appear in the INPUT statement. Older BASICs (like the Atari) do not allow for a prompt string. An example of both is given below:

#1 (With a prompt string)

```
NEW
10 INPUT "WHAT IS YOUR
NAME "; N$
20 PRINT N$; " IS YOUR
NAME."
RUN
```

The computer will print:

```
WHAT IS YOUR NAME?
```

HAL 2000 (you respond)

```
HAL 2000 IS YOUR NAME
```

(responds the computer.)

#2 (Without a prompt string)

```
NEW
5 DIM N$ (10)
10 PRINT "WHAT IS YOUR
NAME?"
20 INPUT N$
30 PRINT "YOUR NAME
IS"; N$
RUN
```

The computer will print:

```
WHAT IS YOUR NAME?
```

HAL 2000 (you respond)

```
YOUR NAME IS HAL 2000
```


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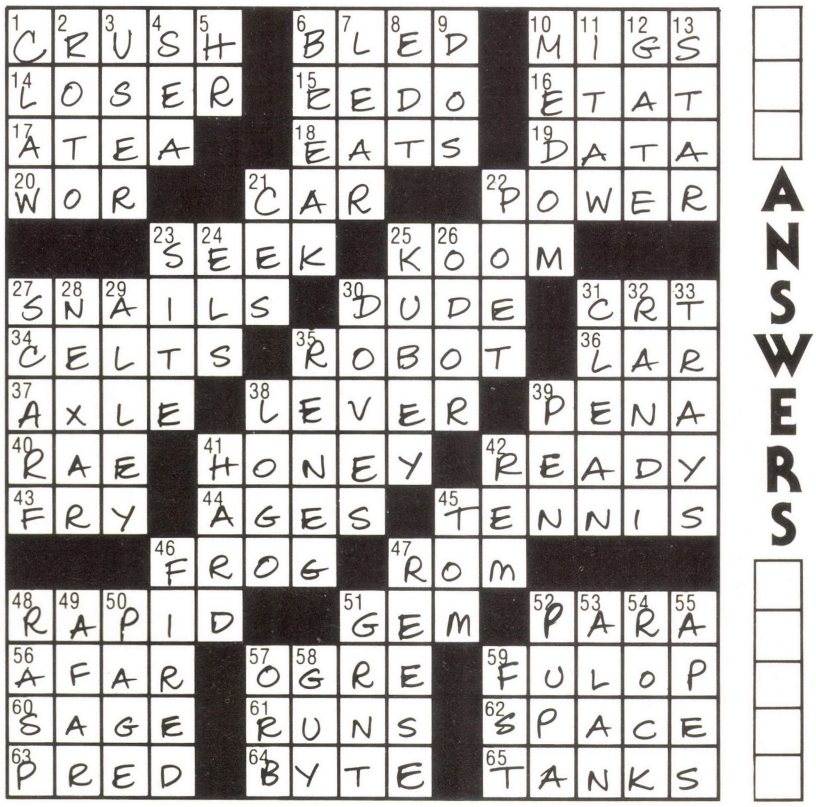
(responds the computer)

As a final little program to end this lesson with, try this. It is written for Atari BASIC, so if you're computer allows for a prompt string in the INPUT, modify it to fit.

```
NEW
5 DIM N$(20), A$(20), J$(20)
10 PRINT "WHAT IS YOUR
NAME?"
20 INPUT N$
30 PRINT "YOUR NAME
IS "; N$; "HOW OLD ARE
YOU?"
40 INPUT A$
50 PRINT "YOU ARE "; A$;
"A LIKELY STORY! WHAT
DO YOU DO?"
60 INPUT J$
70 PRINT "YOU CALL
YOURSELF A "; J$; "?
GIMME A BREAK! HA!"
RUN
```

Next installment: READ and DATA, GOSUB, GOTO, REM, IF . . . THEN statements and a complete interactive program for you to practice with.□



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COMING ATTRACTIONS

Continued from page 92

Another Fox VCS movie game was *Flash Gordon*, a space game in which Flash must do battle with Ming's armada and destroy the emperor's city. The only non-movie title from Fox is *Crypts of Chaos*, in which you investigate a crypt while fighting off the guardians of the tomb.

Commodore

While Texas Instruments demonstrated a new version of its popular TI-99/4A, Commodore offered its MAX Machine home computer and video game system with built-in music synthesizer at under $100. Always the price leader, Commodore introduced yet another under-$1,000 small computer system, the P-500, fit for personal or business use.

U.S. Games

U.S. Games' premieres were typical of the new type of non-violent game many software companies showed.

Kicking off the previously mentioned "food" genre is a trio of U.S. Games games, namely *Eggomania*, *Bakery* and *Picnic*. The former finds a circus bear in a top hat attempting to catch eggs laid by a low flying bird, something that all bears do naturally. Miss enough eggs and you have a bear ready for the frying pan.

In *Bakery*, you must decorate cakes and put them in a box via paddle controllers before they fall off the end of a conveyor belt. If you're still hungry, there's *Picnic*, another paddle game in which you must stop flies from eating your hamburgers.

ColecoVision

ColecoVision has a sleek new home computer adapter for under $100 featuring a full typewriter keyboard and expanded memory. Mattel/Atari-compatible cartridges from Coleco include *Chess*, *Tunnels & Trolls* fantasy game and *Ken Uston's Blackjack*. By summer and fall, look for new coin-op licensed games as well as home computer software from well-known companies (like Imagic) to run on ColecoVision. □

VOICE

Continued from page 43

Invaders. The game starts with the appearance of what seems to be a skull that issues a virtually incomprehensible challenge. Then eight ships dart in a line across the screen and drop bombs on your starbase. Timelord murmurs more jumbled taunts like "The earth will be mine," and "Defend your world." You can turn the sound off and the game strategy won't be affected at all.

For this, you paid $90 for the add-on module. After playing with these seven voice game cartridges, I'm not really sure that the dimension of human-sounding voices is worth the money yet. There's not a voice game on the market that I'd rate on a par with the top non-voice game.

Still, it's too early to tell whether or not voice games are the wave of the future. To me, their debut has been disappointing. But the technology leaves a lot of room for high-powered programmers to develop remarkable games in the not-too-distant future. And when that happens, those voice game systems will *really* be the talk of the town.□

APPLE

Continued from page 77

fessional-looking report. What's great about a word processor is that if, after typing your report, you decide to make changes, they can be done quickly and easily and you won't have to type your report over. With the press of a key, the computer will print out a whole new version of your report. It makes writing a pleasure. In addition, if you use one of the spelling-checker programs available for the Apple, you'll never have to worry about losing credit for misspelled words.

Write Your Own Game

One of the most exciting things about the Apple II is that, not only can you *play* a wide variety of games, you can *write* a wide variety of games as well. Many a teenager has earned his college tuition by writing computer games. If you're going to write your own games with the intention of selling them, here are some hints:

*Write them in machine language (you'll need it for the speed).

*Use lots of color graphics and sound.

*Use existing arcade games for general ideas, but don't copy them closely. They are protected by copyrights.

*Don't try to market the game yourself. Customer support often requires a lot of time as does keeping track of dealers and what they owe you.

*Don't send your program unsolicited to a software publisher. Write a letter first giving only general details of your game to find out if they are interested.

*Ask for an advance against royalties—$1000 is not unreasonable.

*Royalties range from 10% to 20%, but 15% is pretty common, so try to get at least that.

While the preceding are certainly not comprehensive guidelines, they'll at least get you started on the right foot. Happy computing!□

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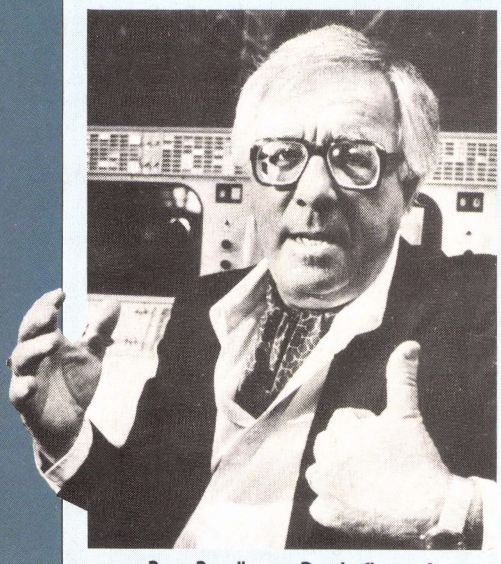
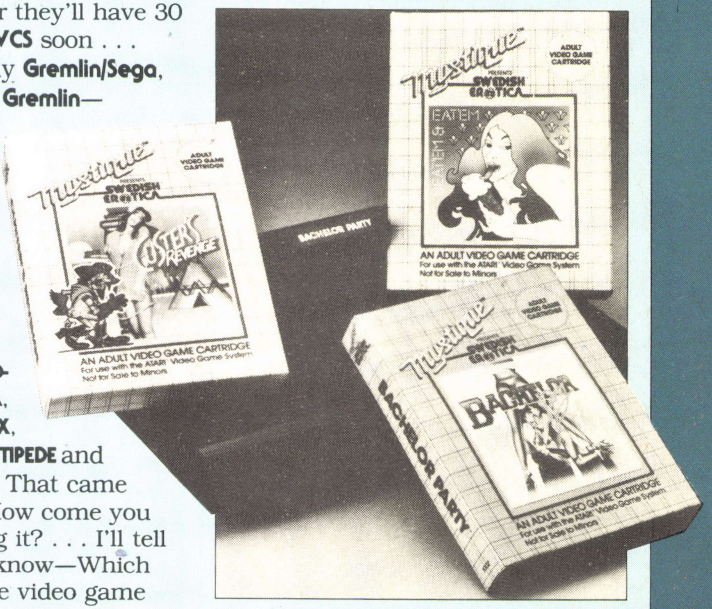
Shocking news, folks. The truth is, the average video game cart costs just **$5** to make. I wonder where the other $25 I have to pay is going . . . **U.S. Games** plans to split their releases into two categories—**Family Fun** for the whimsical "**PAC-MAN** crowd" and **Action Adventure** for you **blood, gore and guts** fans . . . Hey, I saw those **X-rated games**, **CUSTER'S REVENGE**, **BACHELOR PARTY** and **BEAT EM & EAT EM**. Trust me, after five minutes, the novelty wears off and you're lusting for a piece of **ASTEROIDS** . . . I hear that **Timex** has been getting 50,000 phone calls each week from people who want to know about the first computer for less than **$100**, the **TS 1000**. They should have read the first issue of **EF** . . . Science fiction genius **Ray Bradbury** has taken us to galaxies far, far away. But it wasn't until November that he flew on an airplane for the first time . . . It looks like another game company has bitten the big one—**Cinematronics**, which gave us **NAUGHTY BOY** last year, has filed for Chapter XI. Interestingly, they still exhibited a new game at the **AMOA** show in Chicago—**ZZYZZYX X** . . . The **voice synthesizer** for the **Atari 5200** should be available by the middle of the year, gang . . . What's this about some new software company called **Intermagnetics**? I hear they'll have 30 games for the **Atari VCS** soon . . . **Sega/Gremlin**, formerly **Gremlin/Sega**, which was formerly **Gremlin**—has changed its name. To **Sega**. That's almost as bad as **Astro-arcade/Astrovision/Astrocade** . . . The top arcade games of 1982 were, in order: **MS. PAC-MAN**, **ZAXXON**, **DONKEY KONG**, **ROBOTRON**, **TURBO**, **GALAGA**, **STARGATE**, **TEMPEST**, **QIX**, **FROGGER**, **PAC-MAN**, **CENTIPEDE** and **DEFENDER . . . GALAGA**? That came out two years ago! How come you guys are still playing it? . . . I'll tell you what I want to know—Which will be the first home video game that gets made into an arcade game? I don't see why it's always the other way around . . . Oh no, now somebody, **Computer Kinetics Corporation** of Westlake Village, California, is making X-rated **arcade** games. Barf me out . . . Can you believe this? There's rumor floating around that video game champs are being recruited for **slave labor on military spacecraft**. Yes, it seems that when you punch your initials into the game as a high scorer, a picture is taken of you and sent to Washington. Give me a break . . . Another name change—**Arcadia** becomes **Starpath**. They say "the name change occurred because the name **Arcadia** was considered to be both limiting and confusing." Not to mention the fact that **Emerson** calls their system "**Arcadia 2001**" . . . Rumor has it that **RAIDERS OF THE LOST ARK** is so hard to figure out, even the people at **Atari** don't know how to play it . . . **The Philadelphia Eagles** football players are video game junkies. Seems that more than half of them, especially top draft pick **Leonard Mitchell**, are addicted to **DEFENDER**. Coach **Dick Vermeil** has been known to order the game unplugged so the players will listen to what he's saying . . . Here's a few celebrities and the kinds of computers they own: **Walter Cronkite**—TRS-80 Color Computer, **Jack Nicholson**—Apple II, **Marlon Brando**—Apple II, **Steven Spielberg**—TRS-80 Model II, **Todd Rundgren**—Apple III . . . October 24-30 was national "Hug a Vending Machine Week." **Who cares**? . . . Remember the TV show **Family Affair**? Well, the girl, **Sissy**, (Kathy Travis nee Garver) is now married to one of the heads over at **Starpath**. I **mean** it! . . . A **3-D** pinball game? I hear they're working on one. Funny, I thought **all** pinball games were in three dimensions . . .



Ray Bradbury: Don't fly me!



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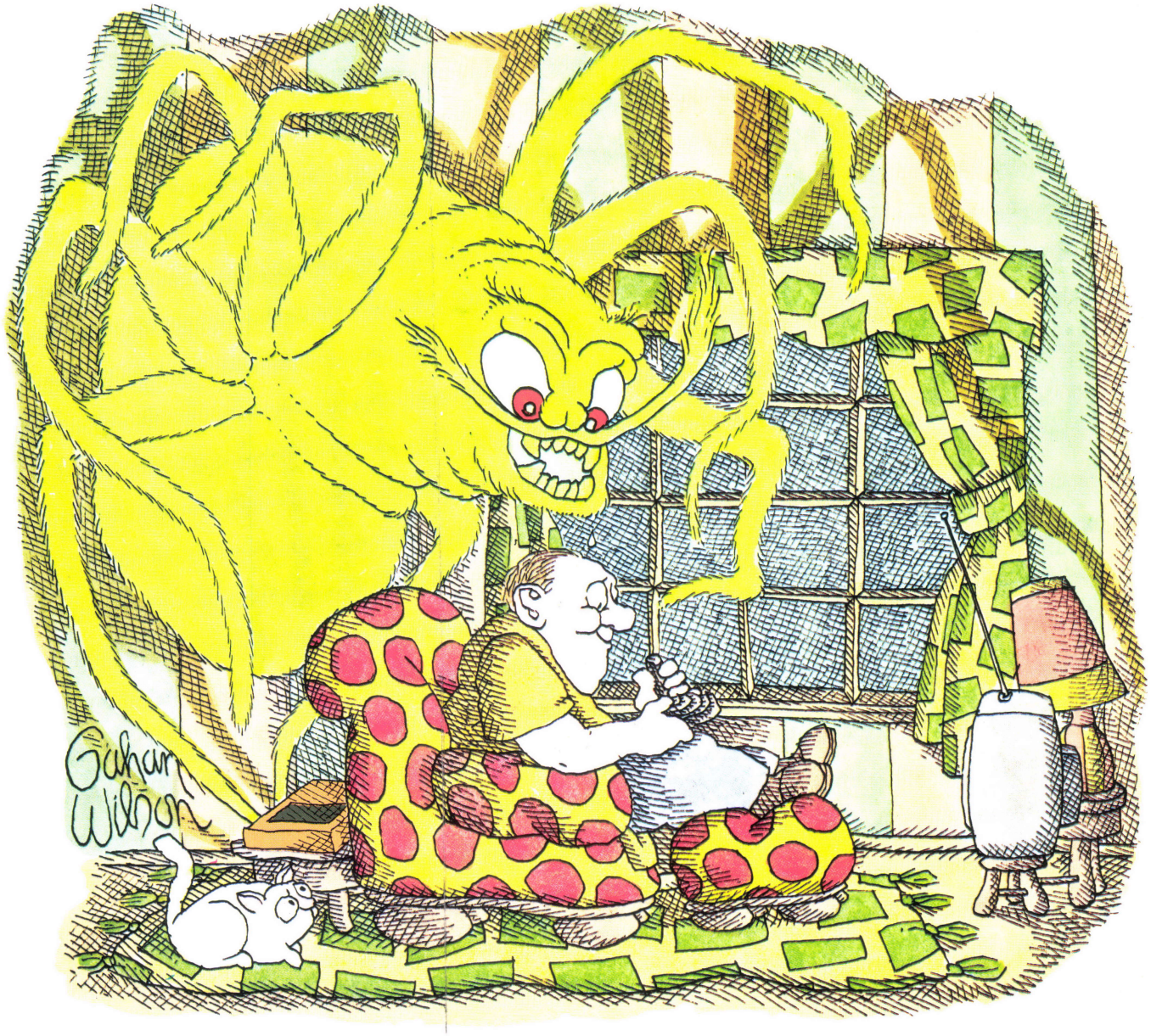

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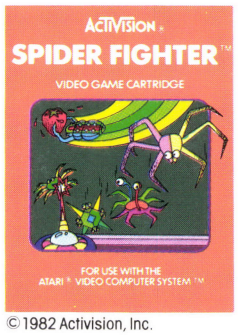

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